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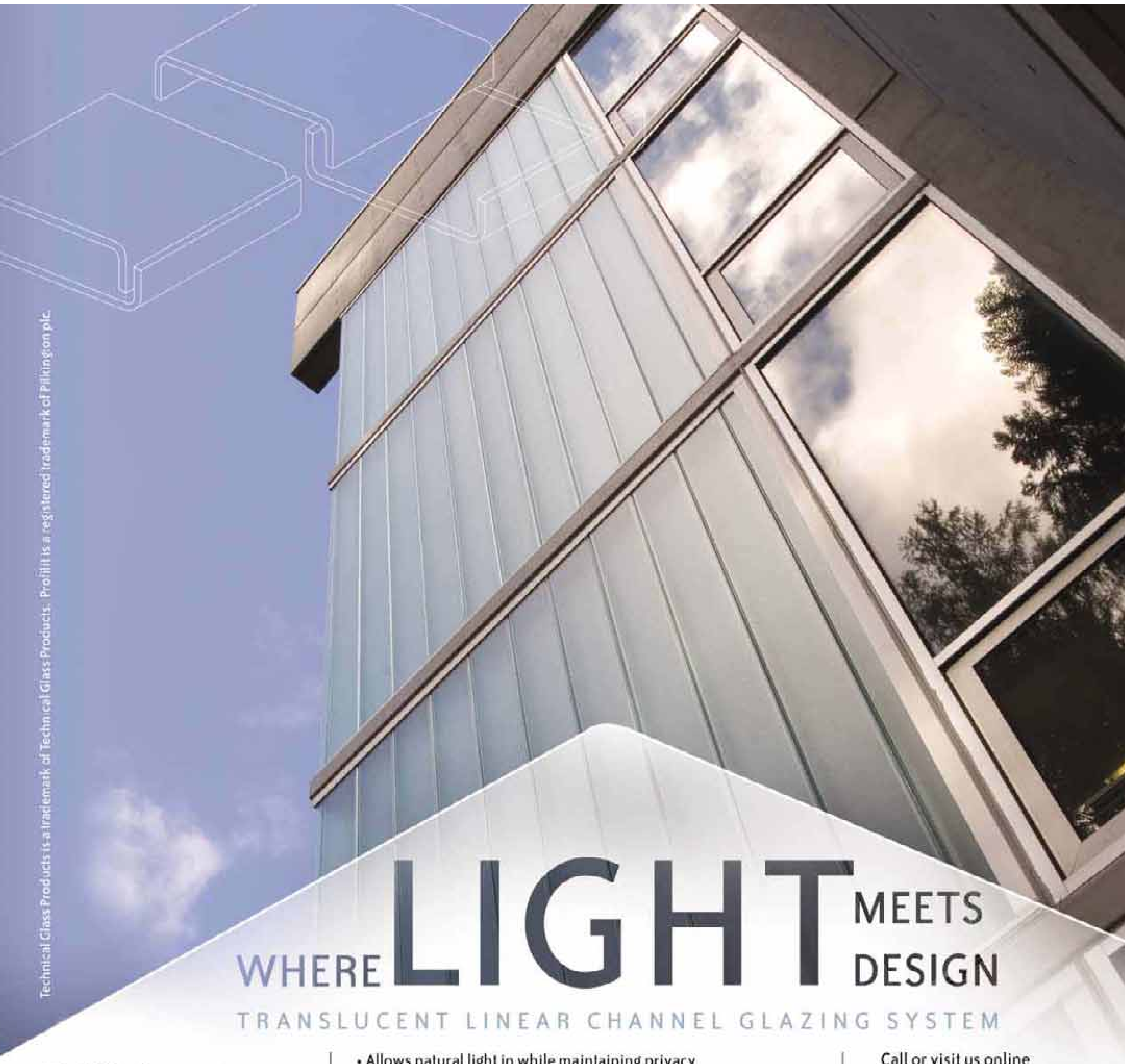

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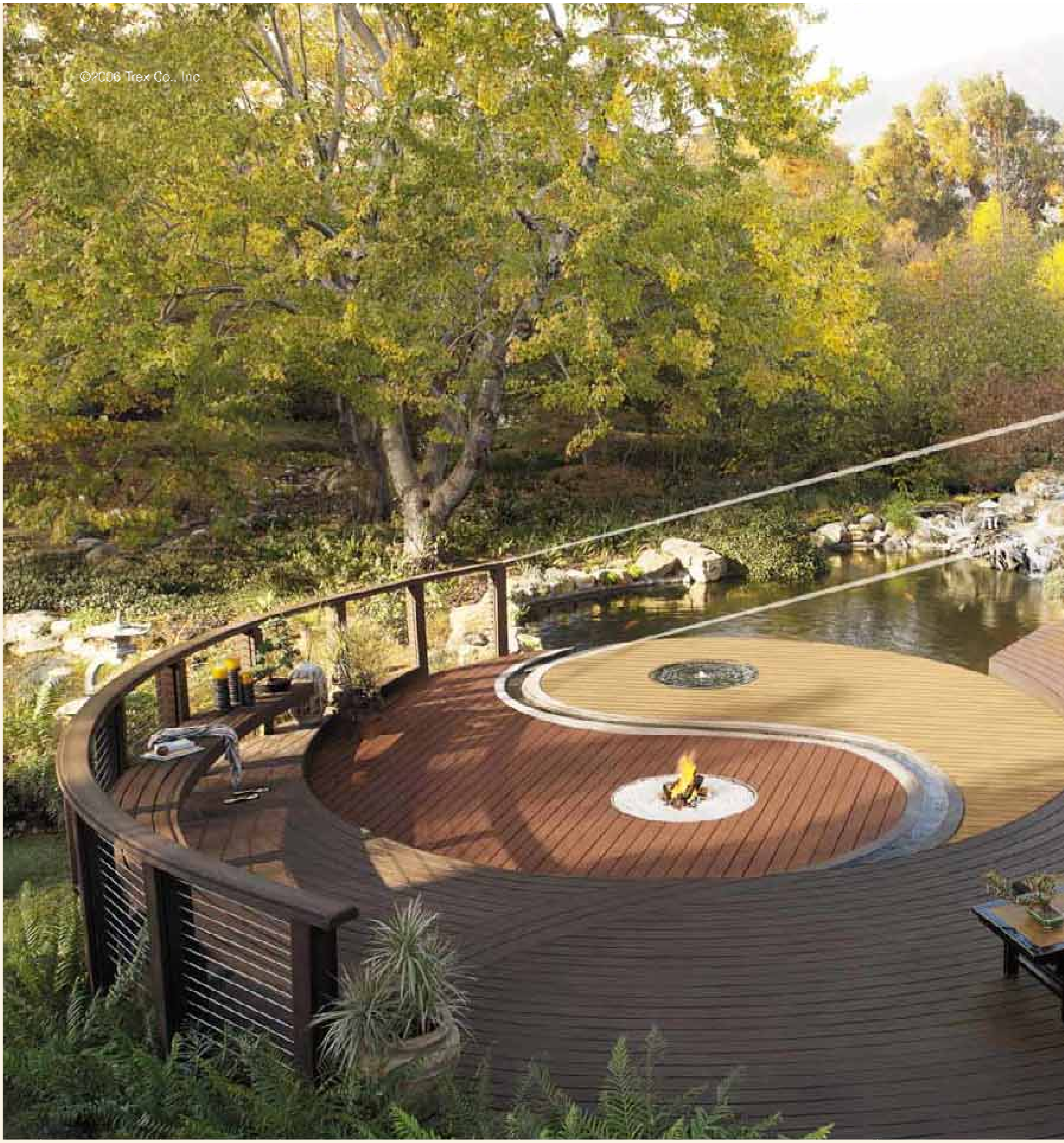
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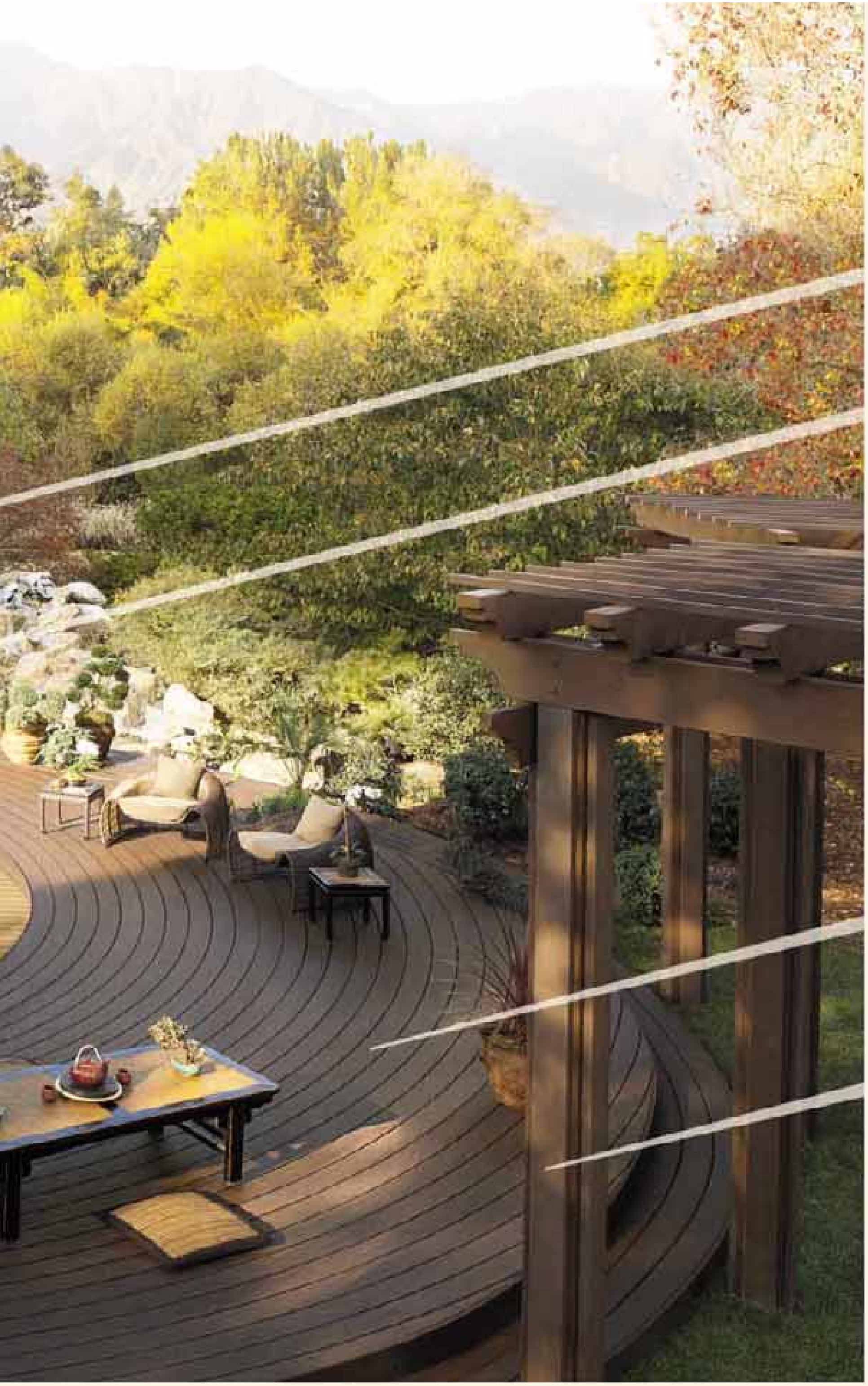

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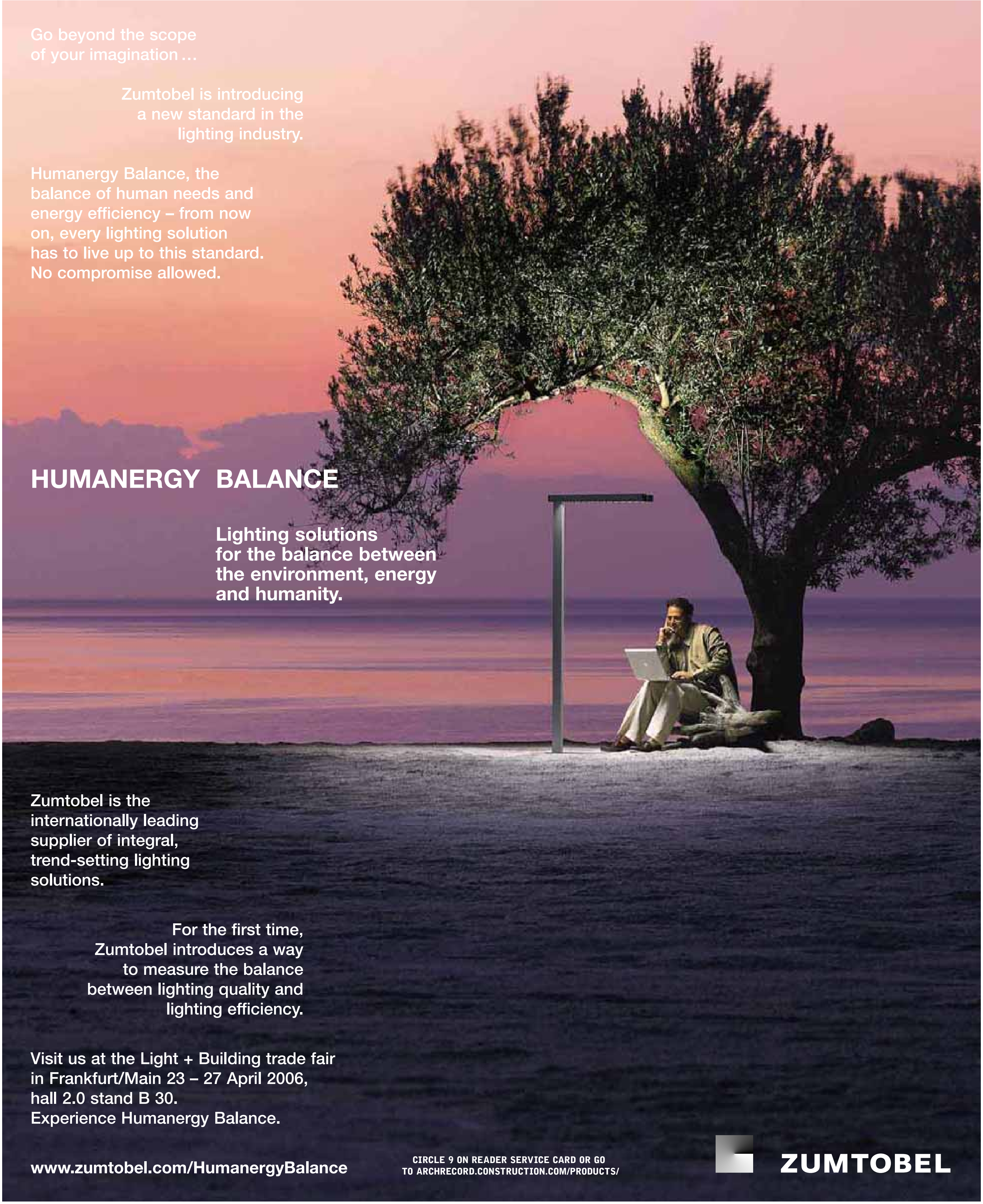

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04.2006

On the Cover: *Lotus House, by Kengo Kuma. Photograph by Daici Ano*
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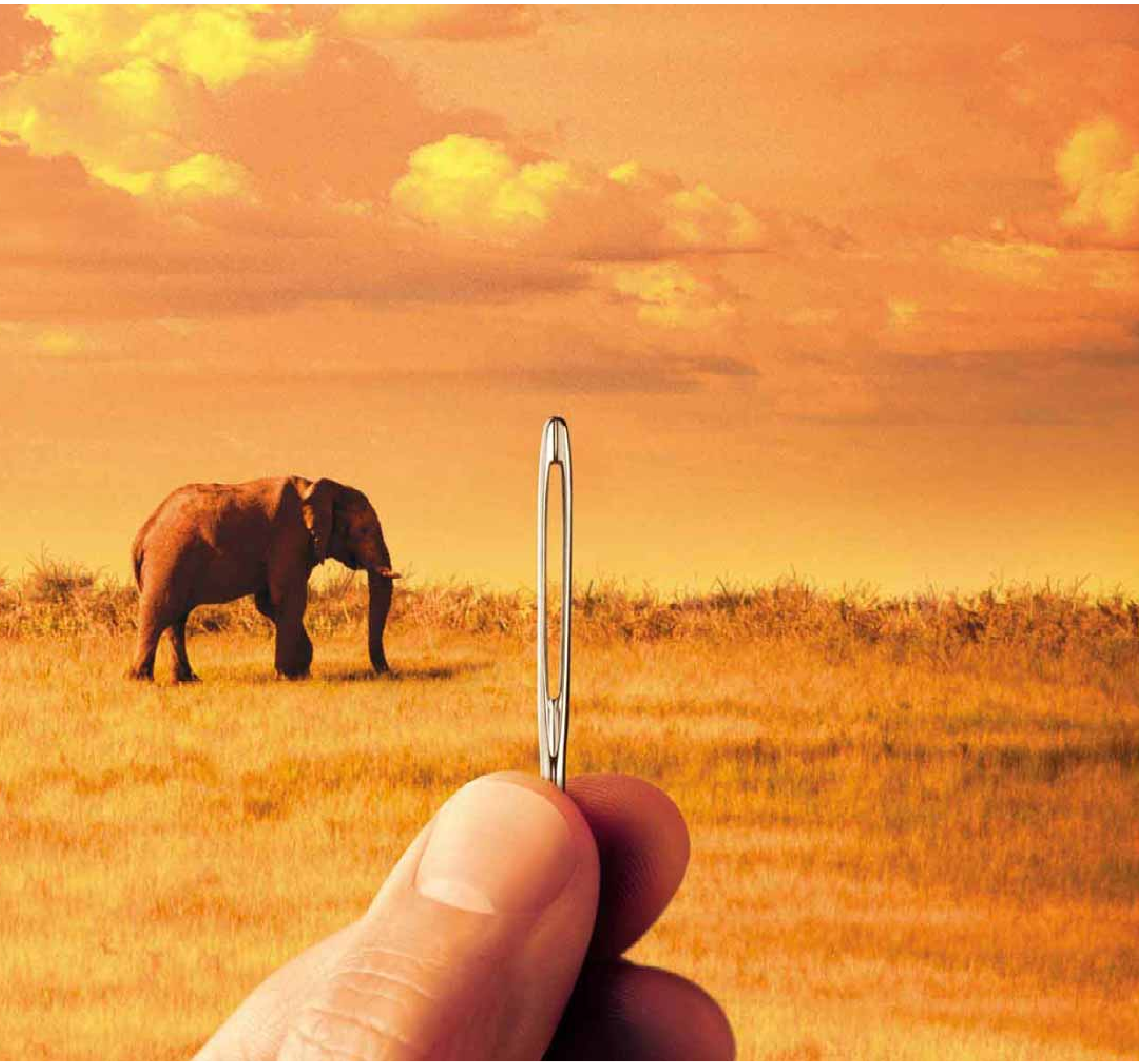

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This month in Continuing Education

April 2006

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Using 3-D modeling to integrate the design and construction process

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- Learn how collaborating with the structural steel industry can provide design professionals with valuable information and best practices when applying BIM to projects.

This month at archrecord.construction.com

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Project Portfolio

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Residential

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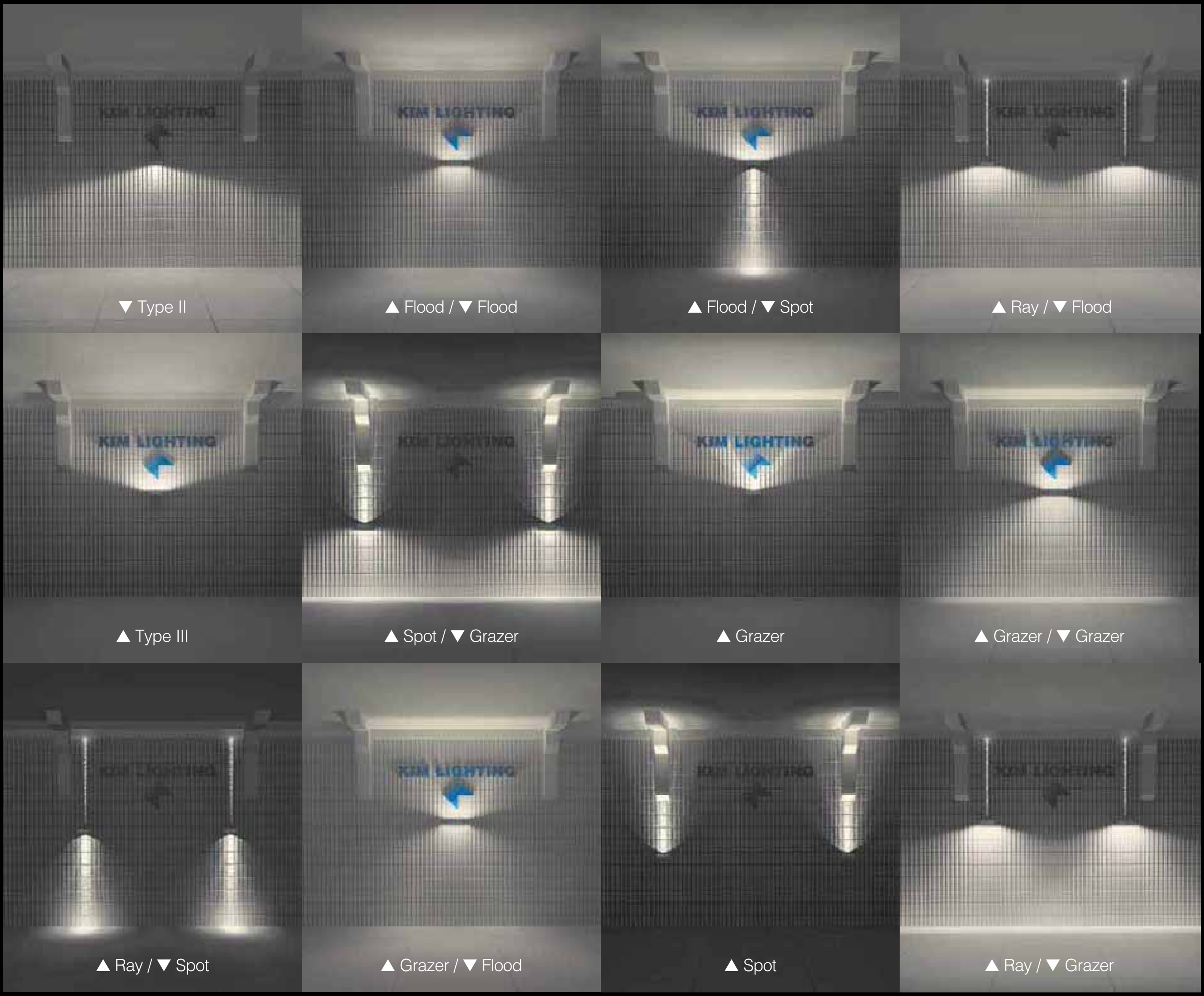

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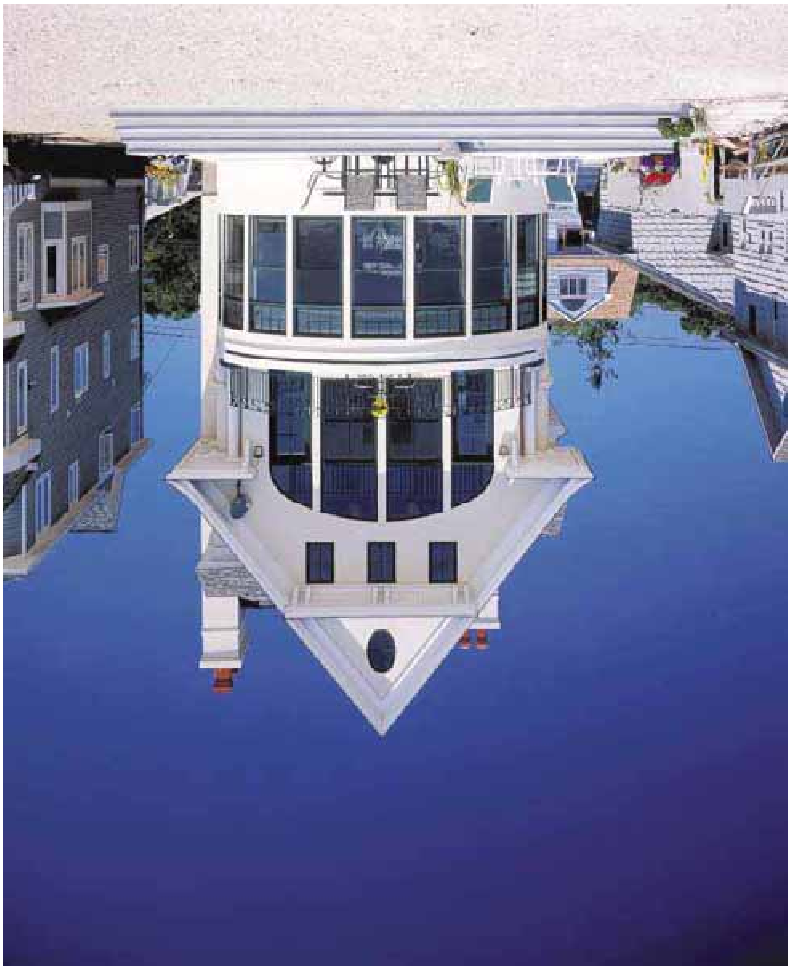

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Lightning Strike

Editorial

By Robert Ivy, FAIA

The conversation with my fellow traveler was breezing along as two frequent fliers compared notes on the American home. Here we were, separated by geography (north/south), work (public versus private sector), yet experiences with our own houses bore striking similarities, including the removal of trees recently downed in harsh weather. Where, we speculated, did nature present only a constant, benign face? The answer: England! Then with one sentence, the universe shifted. "Of course, I would never live there," he observed. "They don't allow handguns, and I couldn't protect my home."

Like a lightning strike, his observation divided us: We clearly saw the world in distinctly different ways. He sallied into the need for protection of hearth and family in a troubled world, describing how his own house lay nestled in four defensible acres of trees; I, by contrast, lived in Jane Jacobs land writ large, an urban oasis of brownstones and pruned street trees rendered defensible by congregate living. What particularly struck me, on reflection, was how I had managed to proceed through a lifetime of architectural involvement so far removed from the worldview articulated by the armed homeowner.

Architects often accept the pieties we have been taught, the lessons that we absorb and discuss, as larger truth. If only the rest of the country would simply wake up and stop sprawl. Plan better cities. Preserve open spaces. Build more environmentally responsible structures. Any fool (read, the public) can see how self-interest is despoiling the land; developers, greed, and blithe unconcern of homeowners form an unholy trinity, from this shared perspective, fed by low interest rates and tax laws that encourage the building of the single-family home. While we architects are quick to know the better answer, we might take time to understand the motivation of the people we hope to convince. How well do we actually understand, for instance, the American need for autonomy? Clearly, the homebuilding boom of recent years reflects deep-seated desires. Better understanding of the motives leading to the suburbanization of America can allow us to acknowledge and address, if not agree with, the results. An informed architecture, and planning, can only improve our design.

The need forcefully articulated by my fellow traveler was for security. His position, while extreme to these New York ears and smacking of a Michael Moore parody, historically extends to the founding of the United States, when individual settlers faced the perils of an expansive wilderness and ultimately forged the democratic system we currently enjoy. The philosophical underpinnings that place the citizen at the helm of his or her own destiny stretched throughout the nineteenth century to include a litany of virtues encapsulated in the title of Emerson's well-known essay "Self-Reliance." Wright and other architects mixed morality with design, with repercussions that extend into this new century.

Today, the currents of global change and the challenges to domestic order are creating undercurrents of fear that erupt in unexpected places. Movies such as Safe Room *and* Hostage*, which serve as a sort of dreamlike id to our more rational daytime lives, portray the American house as a fortress, assaulted by crime, powerless in the face of inept authorities. In the case of those imaginary tales, neither the architect-designed houses out in the landscape nor those in the city, protected by electronic systems, fortified by vaults and television cameras, could save the protagonist. The individual homeowner, and heroic strangers, are the best defense.*

Architects are sometimes accused of being out of touch with widespread needs, including security. In this issue, Record Houses again reflects the deep-seated desire for dwellings with a symbiotic relationship to the out of doors that is transparent and in harmony with nature. At the same time, the eight residences presented in these pages and on the Web will never address all of the fundamental questions accompanying our overarching desire to live within the countryside. The traveler might ask, can these remote, leafy bowers offer a sense of security on dark New England nights? What neighbor might you call if the lights went out? Architects are rarely motivated by fear. Ensconced as we are in lofts, or within the hum of the urban village, an unexpected conversation with a stranger suggests that we ponder the qualities of the ideal home and whether we architects are in touch with our clients. While I'll not soon change my own position on the role of firearms as the best source of security, nevertheless I wonder, how well do we know what clients really want?

Robert Ivy

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Letters

Tradition on location

The Red Location Museum designed by Noero Wolff Architects in New Brighton, South Africa [Record, March 2006, page 99], is a good example of incorporating traditions in a structure. It was refreshing to read that local building materials and labor were implemented. The corrugated-iron sheeting and concrete block give the structure an earthy feeling and fits in with the environment. The concept of "memory boxes" helps define the era of apartheid. It is impressive that the architects took the time to include the residents and their customs in the overall scheme.

The end of apartheid, however, has by no means erased racism. Hopefully, buildings such as The Red Location Museum will raise awareness for future generations about the effects of racism. It is ironic that the residents of New Brighton were forbidden in the past to visit cultural institutions unless as employees, and now this museum has been built in their own backyard—dedicated to each and every South African.

—*Adrienne Batson-Cooper, APA, Assoc. AIA*
Brooklyn

A real rebuilding plan

Sorkin's February Critique on the Congress for the New Urbanism's (CNU) work for the Mississippi Gulf coast didn't quite go far enough [page 47]. The CNU espouses "higher density" building and "smart growth," yet is effectively down-zoning some of the cities that have adopted their zoning philosophies. The CNU Charter states that neighborhoods should have densities of "8, 10, even 50 units/acre." "New" urbanism must encompass people who live at densities of 100, 200, even 300 units/acre and must, at the least, make an effort to promote zero or low-energy cities.

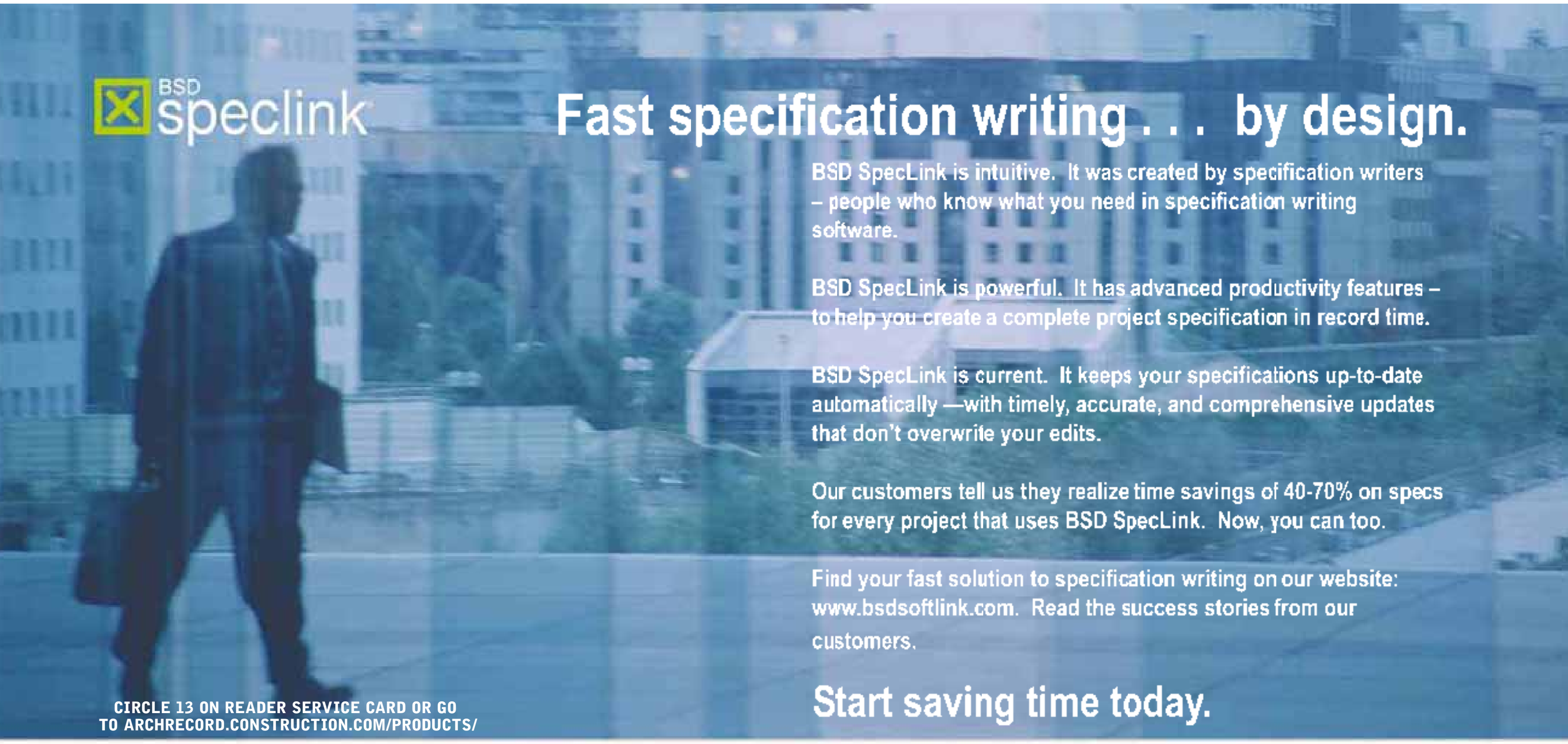
The CNU is trapped by the "formula," controlling every element down to the minute detail. "New Urbanism" should include what writer and activist Jane Jacobs calls "the strange": unpredictable uses and peculiar scenes that are essential to flourishing urban places. The trick is how to ensure "the strange" in zoning theory. It may be not to "fix" everything, but to leave a variable allowing unpredictable differences to occur. The CNU charter rejects "placeless sprawl," yet advocates sameness in the neo-traditional, "seamless" architecture that somehow always requires a porch, regardless of context. Porches are good in some places, not good in others. Real neighborhoods develop over time, are diverse, and cannot be replicated.

Plans for the rebuilding and planning of the Gulf Coast must include real diversity, real densities, and real sustainability, currently lacking in the CNU dogma.

—*Angie Brooks*
Pugh + Scarpa
Santa Monica

The state of criticism

Globalization and the Web are not, as Nancy Levinson maintains in her March 2006 Critique [page 63],



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entirely responsible for the shallowness of contemporary architectural criticism. The best critics of the third quarter of the 20th century operated from a personal conviction about the rightness and beauty of well-crafted buildings. Allan Temko envisioned a technological architecture and cityscape, while Peter Blake lovingly wrote about the moral authority of Modernism (especially Le Corbusier's) while acknowledging its limitations. Criticism's miasma today is primarily due to the absence of the critics' moral conviction about design, not the bewildering array of ideas and forms now found on the Internet.
—James A. Gresham, FAIA
Tucson

Lost spirit

I was disheartened to read the feature on the Rural Studio after Samuel Mockbee [March 2006, page 76]. On the one hand, it is great to see the work continue after Mockbee's death. On the other hand, the design language has dramatically been altered.

I applaud Andrew Freear's continued efforts to follow in Mockbee's larger-than-life shoes and his success in mainstreaming the studio work. However, stating the opinion that the architect was perceived as a person who "the locals all thought was loony" seems inappropriate and disrespectful to the studio's founder.

Architecturally, there has been a shift from a study of vernacular form to a refined universalistic architecture that is mainstream Modern. In the article, Andrea Oppenheimer Dean describes the work since Mockbee's departure as "sophisticated" compared to the earlier work—yet the new work appears to lack the spirit of context and place that he and his students so assuredly conveyed in the architecture.
—Doug Sonsalla
West Fairlee, Vt.

Risk assessment

The interview with Supreme Court Justice Stephen Breyer ["The Importance of Openness in an Era of Security," January 2006, page 80] was interesting for a number of reasons. It is exciting to hear a client describe how one can feel one's spirit rise upon walking into a well-designed building. And I share Breyer's views on risk assessment when he states: "Not all risks can be avoided. There are many tiny risks that are not worth eliminating. You cannot cure tiny risks at a large cost or the country will soon be bankrupt." However, I am not sure I am with him when he opines that architects should try to be involved with making security decisions. It's not that I disagree with his position—I'm just not certain that my insurance will cover the risk.
—Tom Usher, AIA
Kansas City, Mo.

Making landmarks

It was a great pleasure reading the Archrecord2 piece "Thom Faulders: Finding Depth in Surfaces" [February 2006, page 43]. It is a special delight to read about innovative designers who integrate thoughtful concepts with sophisticated technology and make efficient and artistic structures. When such designs become finished structures, they create environmental landmarks that are a pleasure to admire and inhabit. Faulders's AirSpace multifamily housing unit in Tokyo will certainly join this league.
—Stefanie Leontiadis
Enfield, Conn.

Corrections

In a March News Brief about Daniel Libeskind working in Gulfport, Mississippi [page 32], a reference to the town Unawatuna, in Sri Lanka, was misspelled as Atawatuna.

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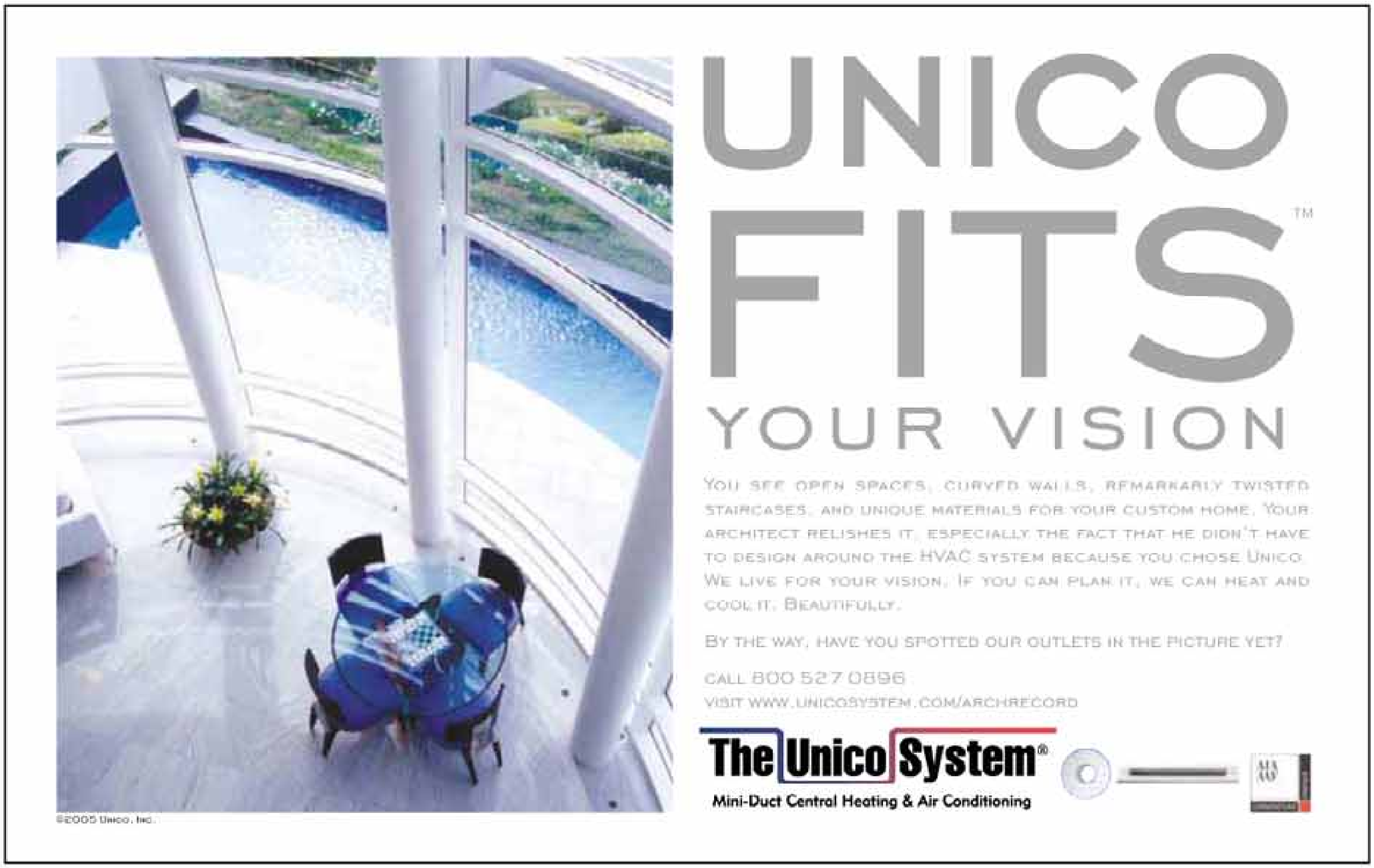

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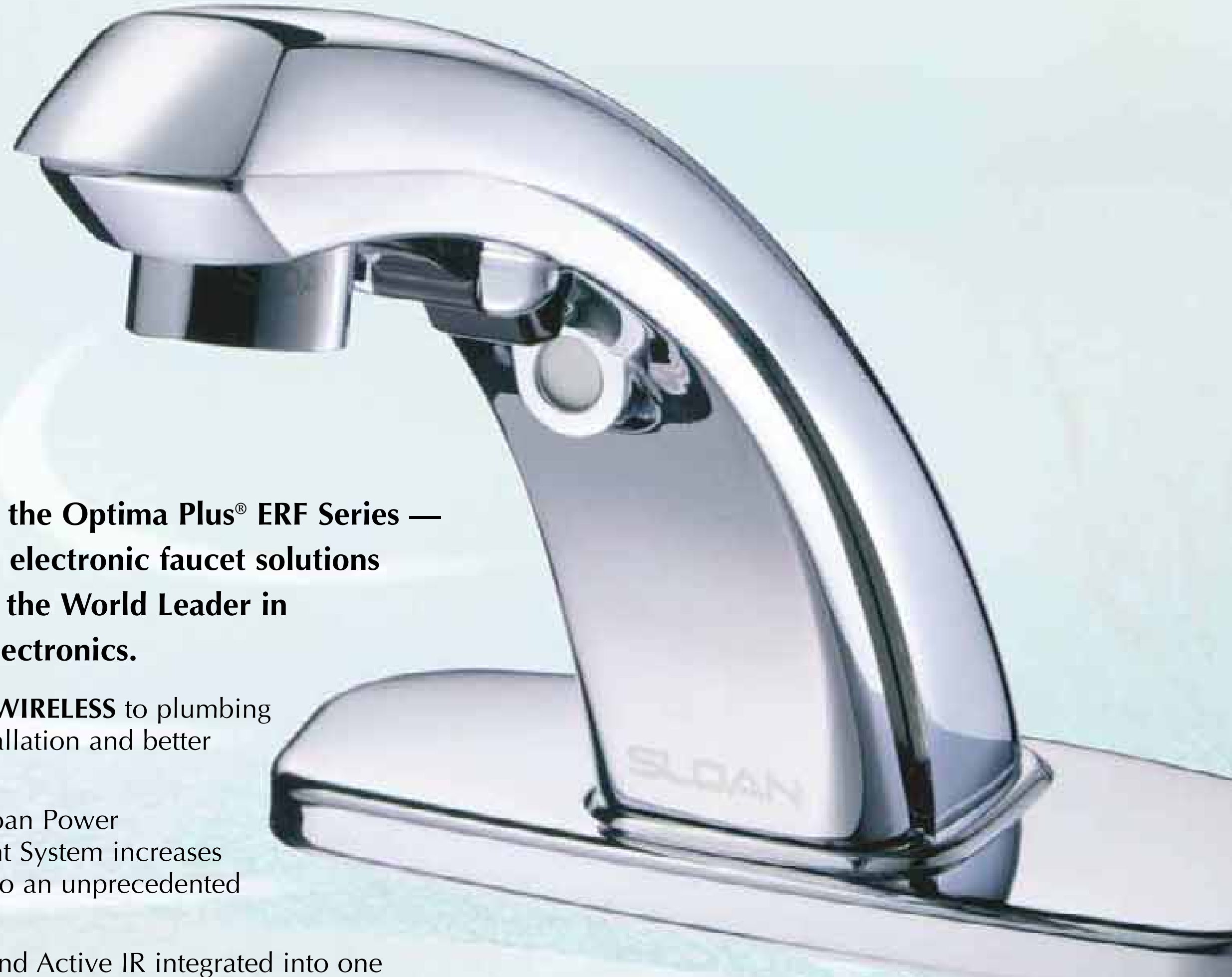

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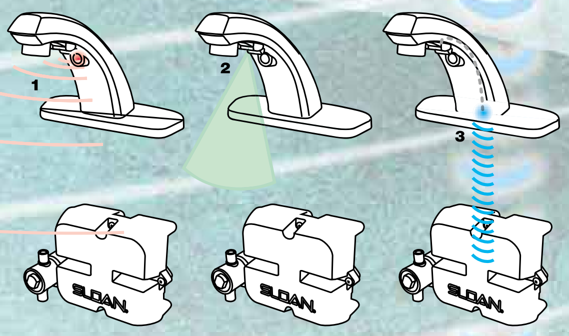

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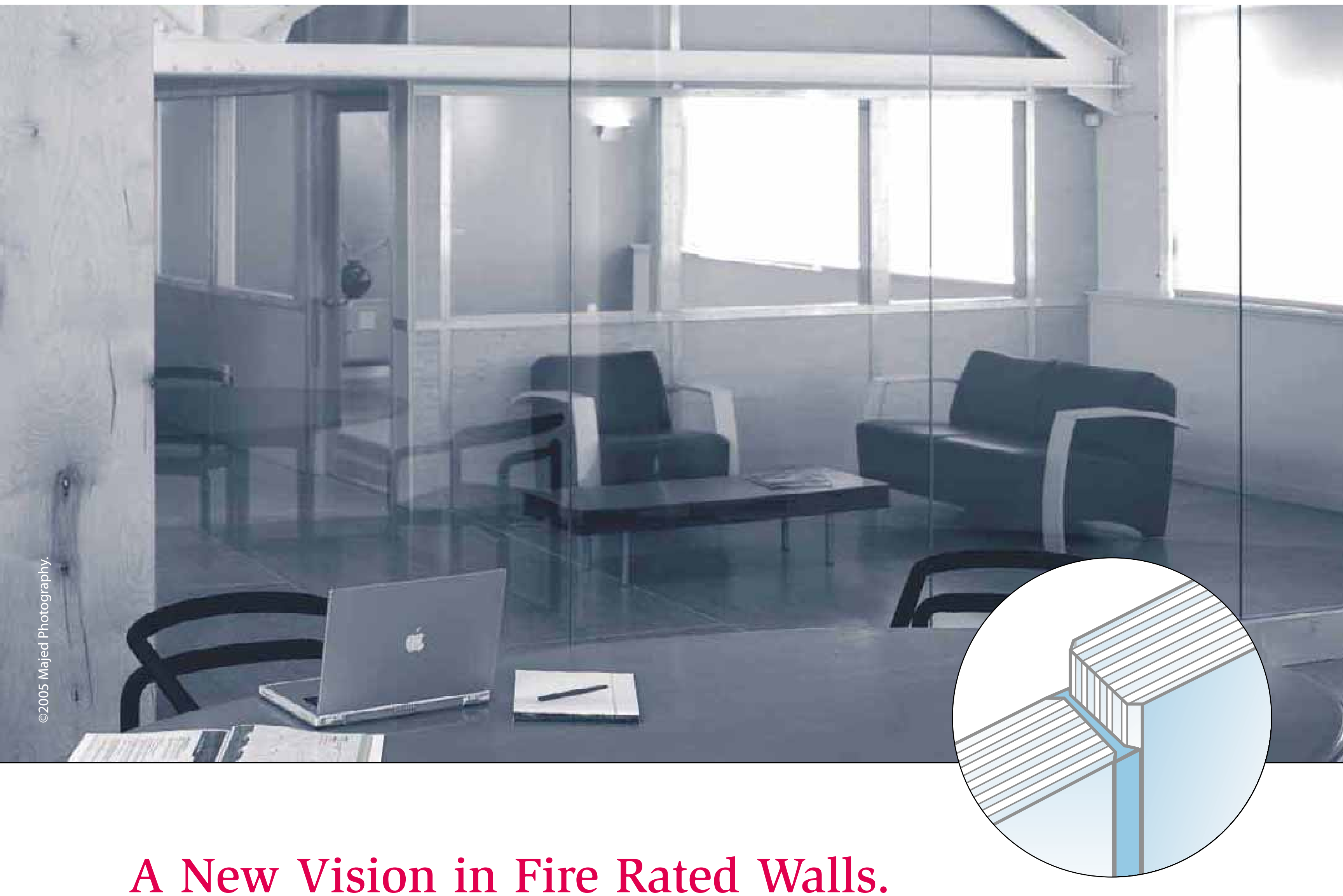

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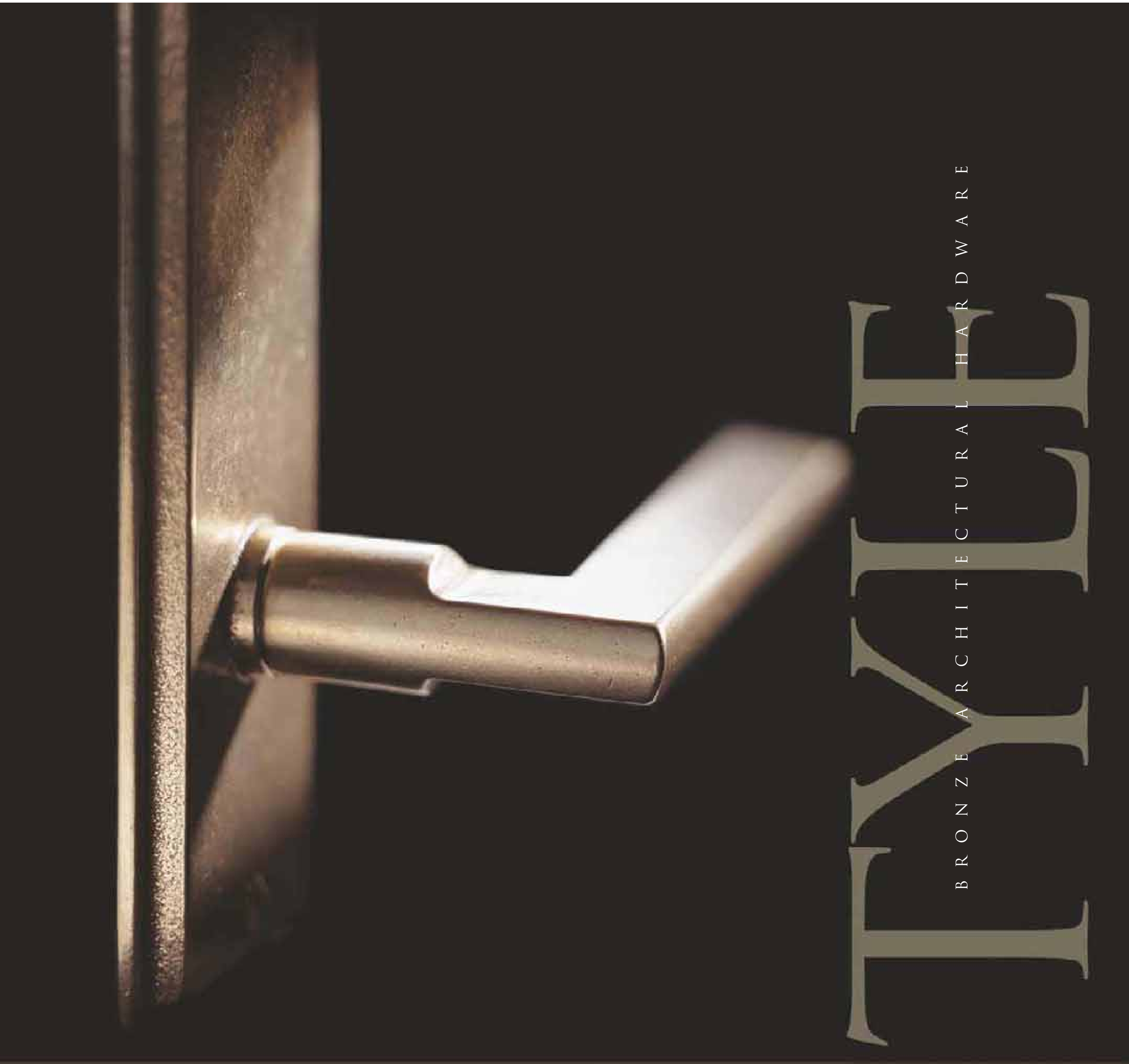

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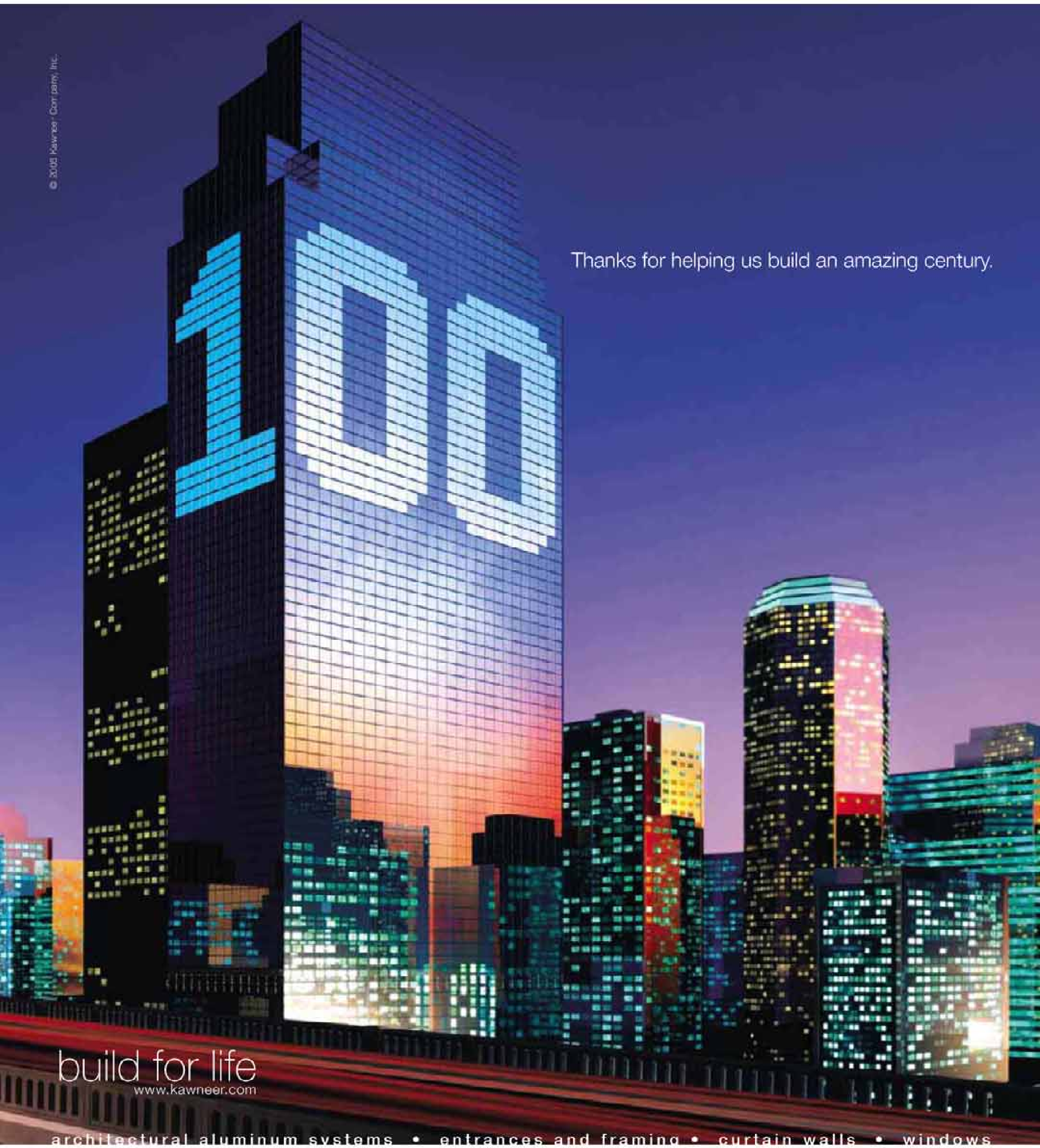
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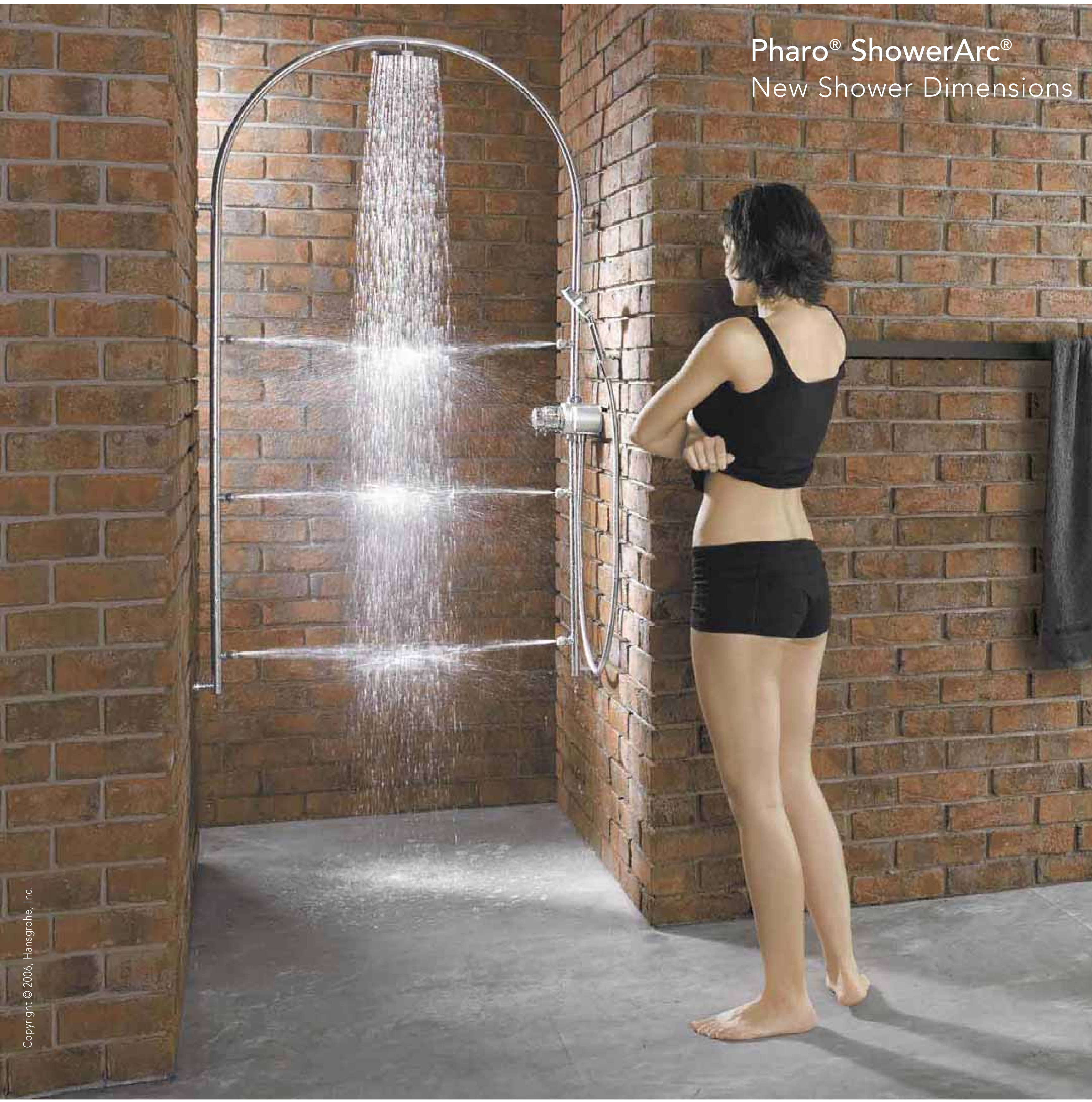

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Record News

Highlights

p.34 **Gulf Coast rebuilding update**
p.38 **Gehry designing first Las Vegas project**
p.43 **Calatrava's Dallas Bridge soon under way**
p.44 **Rudolph's Riverview High threatened**

Despite controversy, Rogers will keep Javits commission

In early March, British architect Richard Rogers's recently released design for the expansion of the Jacob K. Javits Convention Center in New York was still receiving positive reviews. But it was quickly overshadowed by a firestorm over the hosting of a meeting of a group called Architects and Planners for Justice in Palestine (APJP) in Rogers's office on February 2. The group, which includes Charles Jencks, Michael Sorkin, Rogers's partner Abe Hayeem, and others, is considering a boycott of contractors and suppliers working on the security wall and settlements in Israel's occupied territories. APJP may also call for Israeli architects to be expelled from the International Union of Architects. The boycott would be similar to one imposed on South Africa during Apartheid.

An interior rendering of the Javits.

Though similar boycotts, such as one against Israeli academics, have already been initiated in Europe, the position is seen as radical in New York. New York Assembly Speaker Sheldon Silver, following a series of articles in *The New York Sun*, called for Rogers to be dropped from the Javits project, and possibly from the redevelopment of Manhattan's East River riverfront and the expansion of Silvercup Studios in Queens (story below). In letters sent to New York Governor George Pataki and Empire State Development Corporation (ESDC) chairman Charles Gargano, Silver underscored the late Senator Javits's support of Israel and claimed Rogers's association with the project "undermines the deep-rooted friendship and strong economic partnership between New York and Israel." State Comptroller Alan Hevesi was also sharply critical of Rogers.

In a statement released on March 6, Rogers quickly dissociated himself from the group, saying, "I am not a member of Architects and Planners for Justice in Palestine, nor have I ever been.… I abhor boycotts of any kind—of Israel or any other place. It is not a way to achieve peace, and I will not be party to any group or movement that advocates a boycott." The statement appeared to satisfy ESDC's Gargano, who, in a statement dated March 9, told Rogers, "Now it's time to get back to work."

Some prominent architects like Daniel Libeskind have backed Rogers, while others, such as Moshe Safdie, have expressed concern. The Anti-Defamation League (ADL), however, was satisfied with Rogers's clarification of his relationship with APJP. "You don't protest a boycott by initiating another boycott," says Abraham H Foxman, national policy director for the ADL. "Architects should build!" he says. "We should move on." *Alan G. Brake*

Silvercup Studios towers would revive Queens skyline

A rendering of the Silvercup towers.

New York City's borough of Queens isn't known for cutting-edge architecture. But its lackluster skyline is now facing a dramatic transformation with a $1 billion, mixed-use development designed by Richard Rogers for the Queens-based television and film production company Silvercup Studios. Plans call for two residential towers, approximately 600 and 500 feet tall, as well as a 526-foot-tall commercial building. The new buildings are to be constructed along the East River on a 6-acre site next to the Queensborough Bridge. The 2.2-million-square-foot project includes 1,000 units of residential housing, office and retail space, a riverfront esplanade, and a cultural facility, along with eight new soundstages.

The design of the Silvercup Studios towers, with their distinctive exoskeletons and exposed diagonal cross bracing, reflects Rogers's penchant for displaying buildings' structural and mechanical systems. Silvercup Studios' president, Stuart Suna, who trained as an architect, says that the development's design is partially inspired by the structure of the Queensborough Bridge itself, which is reflected on the buildings' bracing and proportions. The manner in which the massing of the three towers slopes down complements the bridge's catenary curves, he says. The Silvercup project also includes the restoration of the landmark 1892 New York Architectural Terra Cotta Company building, situated on the site.

Silvercup Studios' chief executive, Alan Suna, who co-owns the facility with his brother Stuart, says that the recent controversy over Rogers's reported association with the U.K.-based group Architects and Planners for Justice in Palestine (story above) shouldn't impact the architects' involvement with the Queens project.

The new development will be located six blocks west of Silvercup Studios' main production complex, which is the largest full-service film and television production facility in the Northeast. Stuart Suna says that his intention is to create a 24-hour-a-day live, work, and leisure facility similar to the Time Warner Center in Manhattan.

The studio expansion is coming at a time when New York City's film and television industry is burgeoning, thanks in part to new city and state tax credits and other financial incentives. More than 250 films were shot in New York in 2005, compared to 202 in 2004, and the number of location shooting days in the city rose 35 percent. Currently, the city's production industry employs 100,000 New Yorkers and contributes $5 billion to the local economy. *Alex Ulam*

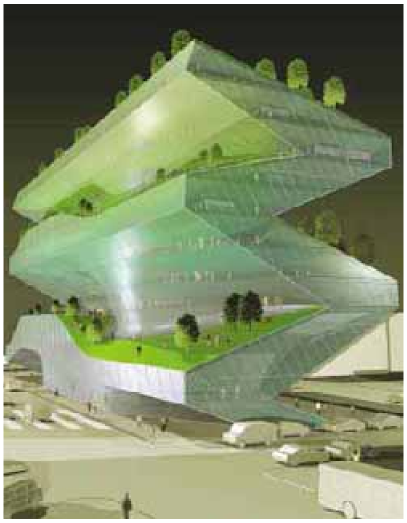
PHOTOGRAPHY: COURTESY ROGERS FOWLE EPSTEIN (TOP); RICHARD ROGERS PARTNERSHIP (BOTTOM)

SPECIAL HURRICANE REPORT

Louisiana planning begins; designers in region express sharp divisions

While New Orleans's redevelopment plans have seized the spotlight in Louisiana, Governor Kathleen Blanco and her 26-member Louisiana Recovery Authority (LRA) have named their own "dream team" of state planners, which started work in February. The team includes Calthorpe Associates, Urban Design Associates (UDA), and Duany Plater-Zyberk (DPZ).

DPZ, known for promoting mostly traditional New Urbanist planning, also led a major charrette in Mississippi last fall. The firm is leading design charrettes in towns and parishes throughout the state, helping them create model development plans. UDA, with information from those charrettes, will assemble "pattern books," featuring architectural designs that can be used by homeowners and businesses as they rebuild. Calthorpe is helping develop a regional-planning vision. Regional plans are expected to be completed by the end of the year.

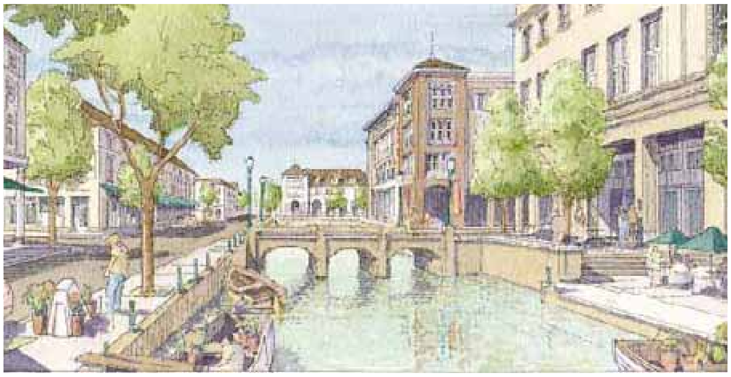


UN Studio's zigzagging community hub, at a New Orleans-themed show in Rotterdam.

Four of DPZ's weeklong charrettes were held in February, and another began on March 7 in Arabi, outside of New Orleans. Designers and residents shared ideas, sketched, and even drew up resolutions, forming plans that Adrés Duany says have already been formally adopted by some municipalities.

Participants proposed creating walkable neighborhoods, ensuring housing diversity, maintaining "community character" (including antebellum and Victorian architecture), conserving open land, and using "smart codes," which unify zoning, design standards, road types, and other elements. Outside design, charrette members advised forming community development corporations to buy land for redevelopment, creating new industries, and even moving most residents in one town, Erath, to higher ground.

Some critics have complained about the participation of the Congress for New Urbanism (CNU), which Duany helped found, in both Mississippi and Louisiana. In RECORD's March issue, critic Michael Sorkin called the CNU's methods "undemocratic," and labeled the group's historicist style "smiley-face architecture." Duany commented that such critiques are often based on lack of understanding. "It's a caricature. They still say New Urbanism is about picket fences," says Duany, who says he proposed some Modern-styled houses at one of the recent charrettes, albeit to a poor response.



A rendering from a DPZ charrette in Lake Charles, Louisiana, envisioned a canal, and traditional architecture, near the town's Ryan Street.

A different plan for New Orleans

New Orleans Mayor C. Ray Nagin's Bring New Orleans Back Commission's (BNOBC) building committee issued its first planning report in January [RECORD, February 2006, page 26] after a lengthy investigation by Philadelphia-based architects and planners Wallace Roberts & Todd (WRT). The plan, still in development, incorporated environmental assessments of the region and pointed out prime rebuilding opportunities. Lacking rigid design guidelines, the report focused on a "neighborhood-center model" organized around central green spaces and main streets. The BNOBC will conduct subsequent planning workshops in several New Orleans neighborhoods.

Because its promised FEMA funding recently fell through, the BNOBC planning effort is now being funded largely by the LRA and its nonprofit LRA Support Organization. But BNOBC's Reed Kroloff insists that the state's planning team will not play a role in New Orleans, despite Duany's expressed desire to take part. "We have a plan here that will work. We don't need anybody else coming in to be a part of it," he says. Kroloff says he agrees with many CNU planning ideas, like walkable downtowns and public transportation. But he dislikes the CNU's pattern books, which he says are too proscribed, and too often reference the past. "We can learn from the past to create a new vernacular. New Orleans has done that all along," he says.

Vanguard schemes reveal more divergence

Kroloff moved to further support contemporary architecture in the region when he recently cohosted a rebuilding exhibition, called *Newer Orleans: A Shared Space*, at the Netherlands Architecture Institute (NAI) in Rotterdam. It featured plans by U.S. and Dutch firms.

MVRDV proposed a community center built into the side of a newly constructed hill; UN Studio designed a zigzagging structure (left) housing a media library, city offices, and a large auditorium; Morphosis proposed a smaller New Orleans with a more intensified downtown; and Hargreaves Associates drew up flood infrastructure connected to the community via parks and bridges.

NAI director Aaron Betsky, who cohosted the exhibition, hopes the plans will produce symbols to encourage people to return to the city and inspire new thinking in the region. Several Gulf Coast legislators and designers, he says, have traveled to the Netherlands to discuss infrastructure and architecture. Betsky disagrees with Duany's past assertions that architecture has to be what people in the region ask for.

"The question is not giving people what they want. It's giving people more than they want. Giving them something to believe in. If you give people what they know—McDonald's architecture—you're producing a Wal-Mart version of urbanism. Creating a mythical path that never existed will not make it an attractive place to live."

Duany, in turn, is critical of such "detached" schemes: "They don't meet with residents. Their thoughts have to do only with aesthetic concerns." He adds, "This is not a canvas for vanguard ideas. This is a social situation with

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(continued from previous page)

tremendous opportunities."

Kroloff says the event was not a planning exercise, but was meant "to inspire architects and show that there are contemporary solutions for New Orleans."

Is there common ground?

Despite aesthetic and procedural differences, most designers working in the region say they share common ground in sound planning principles. But whether the sides will come together is in question. Kroloff, who admires the CNU's ability to implement its ideals in large-scale planning projects, calls the bickering "foolish," and says "we don't have time for it." Duany agrees, but insists that his group has to be invited to be part of the "elite" discourse.

Meanwhile, WRT principal John Beckman suggests that architectural debates might be premature. "The most pressing needs in New Orleans remain citywide—and neighborhood-specific—analyses and planning. I believe the results of this work are more critical to the short- and long-term sustainability of the city than specific architectural designs." *Sam Lubell*

Demolition begins in New Orleans, as designers and preservationists fight to limit its scope

Demolition in the Lower Ninth Ward.

Building demolition in New Orleans has begun. On March 6, the U.S. Army Corps of Engineers began tearing down 125 homes in the city, identified as a "risk to public health and safety." These were slated to be destroyed by the end of March, says John Fogarty, an engineer tasked with debris removal and demolition for the corps. Structures in the first wave of demolition are located in public rights of way, and most are in the Lower Ninth Ward neighborhood, Fogarty says.

Malana Joseph, a spokesperson for Mayor C. Ray Nagin, says that initially, 5,500 homes were red-tagged. Demolition was stalled by a January civil suit filed by residents. A federal court ruling allowed the city to proceed, using strict notification guidelines. But the delay won enough time for preservationists and city officials to reevaluate structures. They have since cut the list in half.

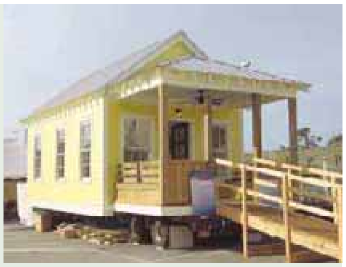
"In the early days, there were rumors that 50,000 homes were going to be demolished," says Kevin Mercadel, program officer for the New Orleans office of the National Trust for Historic Preservation. Fears were justified, since initial assessments, conducted under FEMA debris-removal contracts, were fairly chaotic. Mercadel says that with the glut of subcontractors involved in building assessment it became difficult to determine who tagged properties, and what criteria they used. He adds that many inspectors lacked construction expertise.

Fearing that historic structures might be quickly destroyed, the New Orleans Preservation Resource Center (PRC) partnered with the National Trust to organize volunteer architects and structural engineers to reevaluate properties. Mike Centineo, director of the city's Office of Safety and Permits, inspected 5,500 red-tagged buildings and reduced the citywide number to 1,900, says Mercadel, whose team has identified 369 red-tagged buildings in historic districts. Of those, 199 can be saved, he adds.

Many of the city's red-tagged structures were in poor condition prior to Katrina, plagued by termite damage, rot, or faulty construction, Mercadel says. Much of that is easily repaired. The home of jazz musician Kidd Skidmore, in Holy Cross, had been marked for demolition because the front wall was separated from the structure. "It's a simple repair that requires jacking it up, repairing the wall, and reattaching it," says Mercadel.

Demolition is moving slowly, so preservationists should have time to save more structures. For now, teardowns are on hold until the owners of the next 2,100 identified structures can be notified, the Army Corps' Fogarty says. *Angelle Bergeron*

Designers hope Katrina Cottages will replace FEMA trailers



In her effort to provide an alternative to the ubiquitous FEMA trailers that have been dispersed after Hurricane Katrina, a New York architect has developed a new model for affordable housing: It is called the Katrina Cottage.

"My goal is to take back the word 'affordable,' " says Marianne Cusato, principal of Marianne Cusato Associates. Her design for the cottage (right), first unveiled at the Mississippi Renewal Forum last fall and showcased at the International Builders' Show in Orlando in January, has become a symbol of hope for thousands of Gulf Coast residents whose homes were destroyed.

Cusato's cottage is a 300-square-foot structure that can be constructed faster than a FEMA trailer for less than $35,000. (FEMA trailers cost an estimated $60,000 to $100,000 each.) The traditional-style house is built with fiber-cement siding and a crimped metal roof. The cottage is a more attractive alternative to the sterile FEMA trailers, and can ultimately be incorporated into long-term plans as guest houses or studios. Cusato's cottage is one of several models that came out of the forum, but because it was actually constructed, it became a tangible object that sparked much interest.

Architect Andrés Duany, who helped lead the Mississippi forum, originally called for a possible alternative to FEMA trailers. Whether the cottages will become a reality depends on the federal government's support. Mississippi Governor Haley Barbour has testified before Congress on the structures' behalf.

At a recent Louisiana Recovery Authority charrette in Arabi, Louisiana, a team of architects (many of whom took part in the Mississippi forum) developed a distinctly Louisiana-style cottage model that is about twice the size of Cusato's version. That team is now developing model parks in Mississippi and Louisiana that will feature 17 Katrina Cottage designs and a builders' square where manufacturers of cottage components can display their wares.

Meanwhile, the worldwide construction industry seems to have taken note of the cottages. Cusato recently received a request for a prototype model to be built in Ghana, Africa. ***A.B.***

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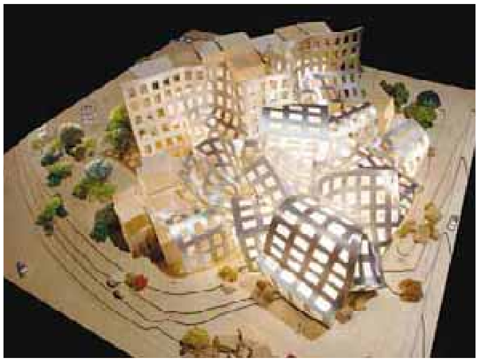


The complex will be both ordered and chaotic.

Gehry designing first Las Vegas building

Frank Gehry is the newest act to play Las Vegas. On February 11, the 76-year-old architect unveiled his first Vegas building: the $60 million Lou Ruvo Alzheimer's Institute, located downtown. The 2-acre complex will be built on land deeded to the institute by the city as part of its 61-acre Union Park development.

The five-story, 55,000-square-foot building will feature clinical, research, and outpatient exam rooms for Alzheimer's and other brain-disease victims. Additional plans include a 9,000-square-foot banquet hall, flanked by a Wolfgang Puck café and catering kitchen on one side, and an interactive "Museum of the Mind" on the other.

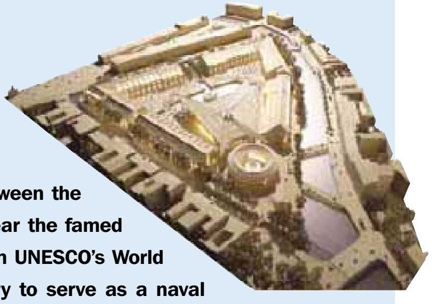
The building's banquet hall will be covered by a wildly curvy, undulating metal-and-glass trellis reaching up to 75 feet, while the main entrance will be made of stacked building blocks separated by glass-enclosed spaces. The contrast suggests the dual functions of the brain, simultaneously ordered and chaotic, structured and imaginative.

"This is something that will separate us from any other place on the face of the earth," says Mayor Oscar Goodman, using typical Las Vegas-style hyperbole.

The project will be funded by the Las Vegas-based nonprofit Keep Memory Alive Foundation for brain-disease research. The foundation was founded by Larry Ruvo, Nevada's senior managing director for Southern Wine and Spirits. The new building is named after Ruvo's father, who died of Alzheimer's.

Gehry characterized the project as "the mouse that roars" due to its modest yet assertive presence next to neighboring high-rise developments. Construction is expected to begin August 4, with completion in 2008. *Tony Illia*

Foster redeveloping Russian island



In February, officials in St. Petersburg, Russia, announced the selection of Foster and Partners to lead a redevelopment of New Holland Island, located in the city's historic center.

New Holland is a 19-acre artificial island, formed between the Moika River and the Admiralteisky and Kryukov canals, near the famed Mariinsky Theater. Five buildings on the island are listed on UNESCO's World Heritage Register. Built in the first half of the 18th century to serve as a naval base, it came under increased military control and remained a closed zone throughout the Soviet period. In December 2004, the military turned the area over to municipal authorities.

Foster's conversion plan (right) will integrate the site's disparate elements around a roofed amphitheater enclosing a pond. A gleaming cupola will top the star-shaped structure, which will function as a year-round facility for aquatic events and open-air performances. The arena will be complemented by a 2,000-seat concert hall, three hotels, a two-tier parking lot, gallery space, and retail and office spaces. Foster, chosen via a city-sponsored competition, enlisted St. Petersburg architectural firm Studio-44 as consultants for the venture. The team's projected design costs came to $320 million, with an anticipated completion date of 2010.

The plan aims to create a flexible cultural quarter to bolster a languishing part of the city. Perhaps Foster's most forceful intervention entails the addition of eight bridges across the canals surrounding the island. A single bridge exists today. Some are worried that diminishing the introverted quality of the island risks undercutting the aura that is inseparable from its landmark architecture. The recent developments will complement French architect Dominique Perrault's expansion of the Mariinsky [RECORD, August 2003, page 36]. Although the cultural complex will continue to be state-run, the city stipulated that the developer, Moscow-based Shalva Chigirinsky, must invest at least $300 million. ***Paul Abelsky***

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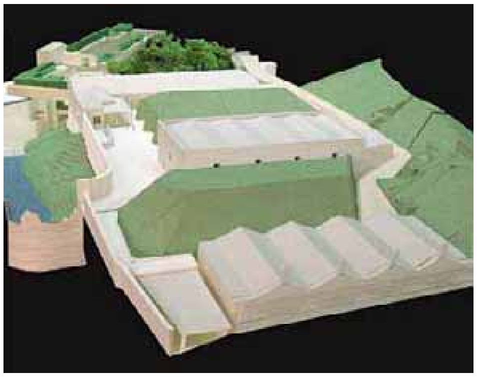
Asia Society unveils ambitious new projects



A model of Asia Society's Hong Kong project.

In late February, Asia Society, a New York–based group that works to strengthen ties between people in Asia and the United States, shared plans to aggressively expand its presence with more than $100 million in new building projects and new programming. New buildings are being constructed in Hong Kong and Houston, and the society is also opening a center this spring in Mumbai, India.

The $52 million center in Hong Kong was awarded to architects Tod Williams Billie Tsien via a competition in 2001. The project has since been delayed, largely due to lease negotiations, says Billie Tsien, but is expected to be completed by 2008. Located in the city's Central district, the new, 20,000-square-foot project will include a café, a conference center, a gift shop, and an exhibition space. It will take the form of a small glass-and-granite box cantilevering over a small ravine filled with giant banyan trees. A lush roof garden will contain a reflecting pool. The project will also include renovation of two mid-19th-century munitions buildings and a lab building that will be turned into a theater, a museum, and offices.

The $40 million, 35,000-square-foot Houston project by Yoshio Taniguchi [RECORD, January 2005, page 34], set to open in 2010, is still in preschematic design. But new models show that it will likely include a long, rectilinear building with large, flat overhangs, overlooking a rectangular pool and two gardens. It will include a 300-seat theater, a café, meeting rooms, classrooms, and offices.

Asia Society already has centers in Houston, Los Angeles, San Francisco, Washington, D.C., Hong Kong, Manila, Melbourne, and Shanghai. But the new projects, say organization officials, will help cement its reputation and better organize operations that had been either scattered or too small. *S.L.*

A model of Taniguchi's Houston building.

Architecture critic Allan Temko dies

Allan Temko, the Pulitzer Prize–winning architecture critic for the *San Francisco Chronicle* died on January 25 in Orinda, California. The cause of death was heart failure. He was 81.

Temko was never lukewarm in his views. He eagerly waded into development fights, championing distinctive architecture that respected the street and the skyline. Temko wrote in *No Way to Build a Ballpark*, a 1993 collection of his essays: "Every fight has its own rationale, but I never doubted that each, in its own way, was striving for excellence, or at least something better than mediocrity."

When Temko joined the *Chronicle* in 1961 he was 37, and had already lived a colorful life that included naval service in the Pacific during World War II, and a friendship with writer and Columbia classmate Jack Kerouac. He appears in Kerouac's *On the Road* as writer Roland Major.

As a critic, Temko conveyed the essence of buildings like Kevin Roche's Oakland Museum (1969), with its "undeniable sense of the expansion of life, and the enlargement of human possibilities." But he's best remembered for his crusades for a more civil landscape. In the 1960s, he helped force a redesign of the San Mateo Bridge south of San Francisco. In later years, he urged the removal of the Embarcadero Freeway, achieved in 1991 with the assistance the Loma Prieta Earthquake.

Another target of his scorn was Postmodernism, at least in its commercial '80s heyday. He scorned a local design review climate where "anti-modern planners compel unlettered modernists to mimic mediocre historic models and half-baked classical notions of their own."

Temko received the Pulitzer Prize for criticism in 1990. He retired in 1993, but continued to write for several publications. *John King*

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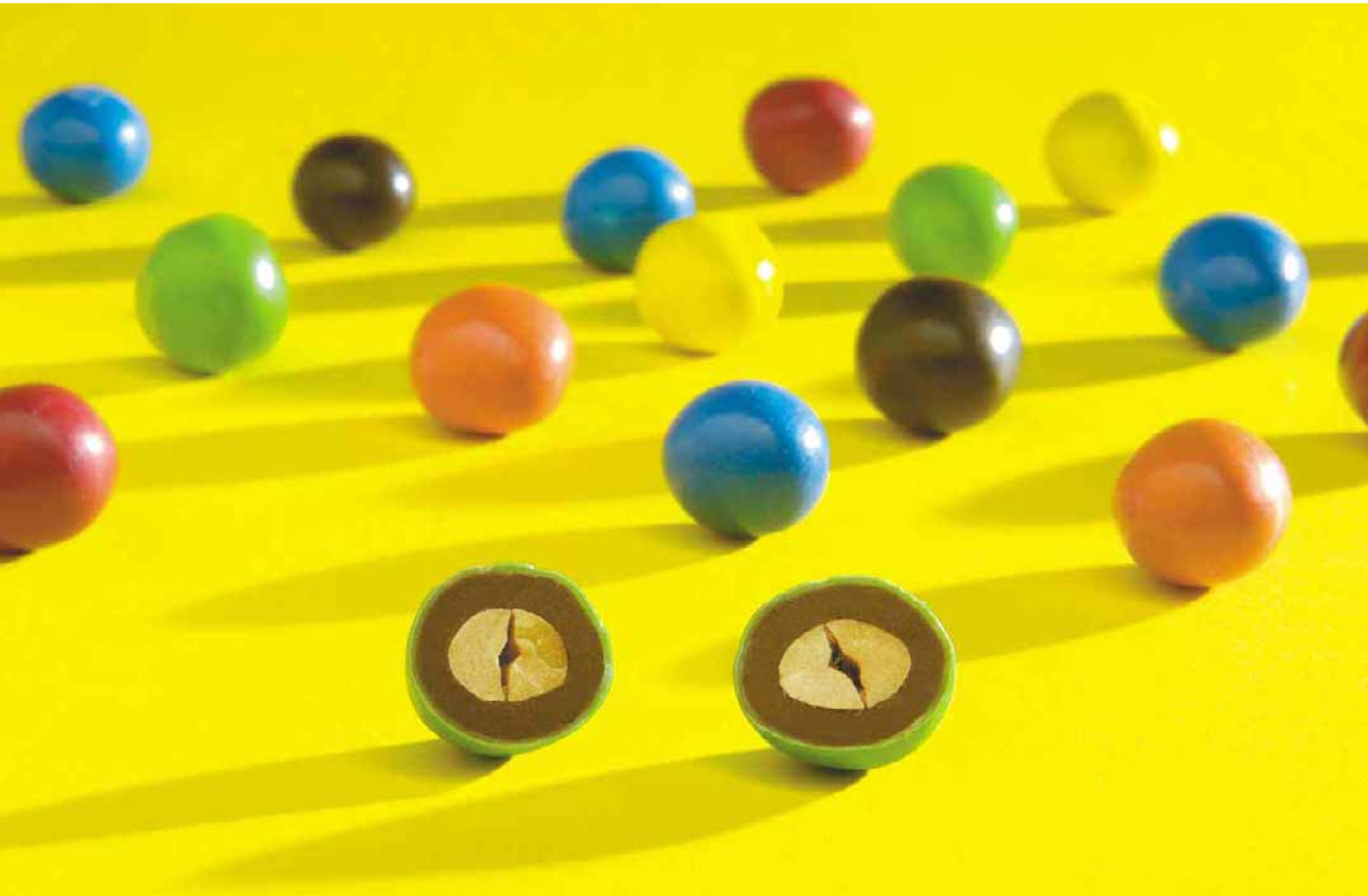

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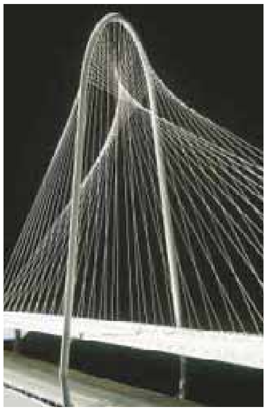
Calatrava's first Dallas bridge beginning construction



The arched bridge would span Dallas's Trinity River.

Whether a city needs a new image or merely a stylish tweak, a Santiago Calatrava–designed bridge could be just the ticket. Dallas is hoping so, anyway, because in 10 years it will have three of them, all spanning the meandering Trinity River on the western edge of downtown.

Aware that the Trinity is both its greatest natural asset and its biggest missed opportunity, city officials hired Calatrava to design a signature bridge, extending Woodall Rodgers Freeway into west Dallas. It will be called the Margaret Hunt Hill Bridge, named for a noted Dallas philanthropist.

The $57 million span, funded by federal, state, and private contributions, is set to begin construction this spring, though the exact date is has not been determined. It will open in 2008. The new bridge will feature a 300-foot-high parabolic arch reminiscent of Eero Saarinen's Gateway Arch in St. Louis, from which cables will descend in a grand spidery web.

Dallas Mayor Laura Miller, perhaps swept up in the moment, predicted the bridge would become "the Eiffel Tower of Dallas."

Calatrava is also designing a 12-lane, $145 million bridge for Interstate 30, and a companion piece for Interstate 35 nearby, both also on the western edge of downtown. The first is funded and is scheduled to open in 2010, the second probably five years later.

"Fifteen million people come to Dallas every year," said the architect. "These bridges will be the new civic gateways that create the image of the city." *David Dillon*

Dispute threatens Jerusalem's Museum of Tolerance

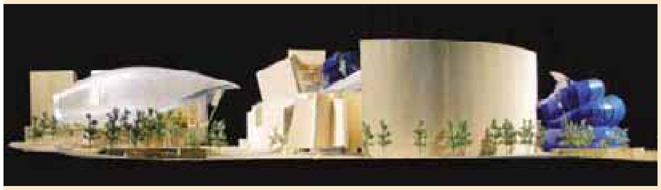
A dispute over moving Muslim graves in Jerusalem to make way for Frank Gehry, FAIA's $200 million Museum of Tolerance (model, below) threatens to delay, or possibly end, construction on the project.

After graves were discovered on the site during early phases of construction, two Muslim groups—Karamah, a human rights organization, and the Al-Aqsa Company for the Development of the Properties of the Islamic Trust—demanded that all work be banned at the site. The museum is to be located at the foot of downtown Jerusalem's Hillel Street.

In March, Israel's High Court of Justice granted a 30-day temporary injunction against work at the site and has referred the parties in the dispute to mediation.

Rescue excavations of the graves by the Israel Antiquities Authority would last several months, according to the authority's lawyer, Yoram Bar-Sela. Such delays occur often in Israel's capital, because "all of Jerusalem is one big archaeological site," says Osnat Goaz, spokeswoman for the authority.

An underground parking garage and ground-level parking lot, built in the 1960s, previously occupied much of the museum site. The site is part of an old Muslim cemetery, which has not been used for burial for decades. A larger part of the cemetery lies under an adjacent park.



The Los Angeles-based Simon Wiesenthal Center, which is building the museum, claims it did not know about the graves before planning construction. Spokesperson Charles Levine says that the city and the Israel Lands Administration assured the organization that no problems existed with the site.

The museum was originally to have been located far from the city center, in northeastern Jerusalem. One reason for moving it was the hope by then-mayor Ehud Olmert, who is currently the acting prime minister of Israel, that a Gehry-designed building would revitalize the downtown. The project, to be built of stone in keeping with a Jerusalem ordinance, as well as glass and titanium, will include cultural and conference centers. ***Esther Hecht***

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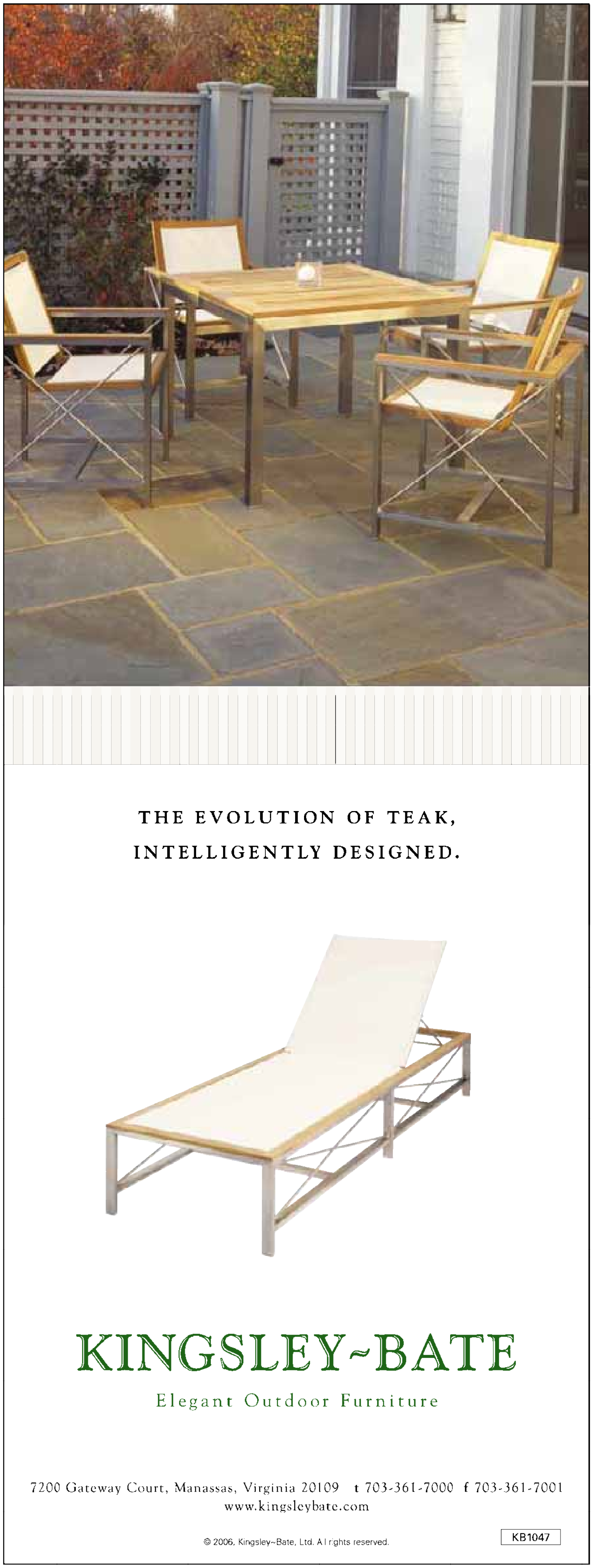
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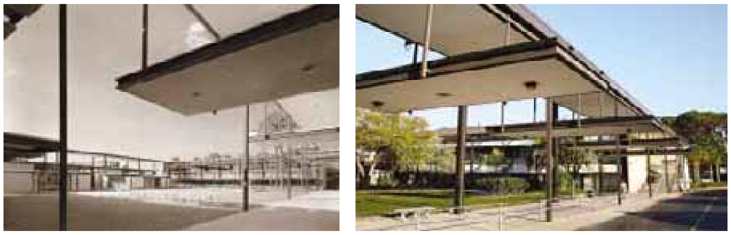
Rudolph's Riverview High School threatened

In February, Florida's Sarasota County School Board announced plans to demolish its Riverview High School. The open, Modernist structure of concrete and glass-on-steel frame was designed by Paul Rudolph in 1958. *Sarasota School of Architecture* author John Howey, FAIA, says the building was one of the best of the local movement's blend of Modernist forms and climate sensitivity.

According to the school board, Riverview can no longer be maintained, partly because of changes made to the building over time. Chuck Collins, director of construction for the school board, says that the reworked air-conditioning system is out of date, that pipes and wires block daylight, and that the building is too small to hold the school's 3,000 students. Security is difficult given Rudolph's open design, and officials want to be able to accommodate larger common areas and new technology spaces.

Martie Lieberman, board secretary for the Sarasota Architectural Foundation, is astonished at the effects of so-called school improvements: "They never consulted anybody about integrity."

Howey, a foundation member, says the group is considering forming a nonprofit that would help fund a rehabilitation of the school. The school district is preparing to construct a new building, designed by local firm BMK Architects, next to the Rudolph structure. The latter would be demolished upon completion of the new building in 2008, and replaced with a parking lot. *David Sokol*



Riverview High School when built, in 1958 (left), and as it stands now (right).

Behnisch building for new Harvard campus

In February, Harvard University tapped Stuttgart-based Behnisch Architekten to design a 500,000-square-foot science complex and stem-cell-research facility. The project will be the first new construction at the university's expansion in the Allston section of Boston. Allston is directly across the Charles River from Harvard's main campus.

According to Behnisch partner Stefan Behnisch, the initial plan calls for a mix of several buildings with a similar scale to the existing Allston neighborhood. The layout of the complex will follow the example of Harvard Yard, with its open corners and varied groupings. The materials will reflect Harvard's eclectic campus, which in addition to its signature red brick, utilizes wood, concrete, glass, and steel. The design will also meet or exceed Harvard's sustainability standards, which roughly correspond to a LEED Silver rating.

Harvard, which owns about 350 acres in Allston, announced its expansion in 2004. The plans call for developing about 200 acres for classrooms, residential buildings, cultural facilities, labs, and other uses. Planners Cooper Robertson, architect Frank Gehry, and landscape designer Laurie Olin have been commissioned to help plan the new campus and urban framework. Groundbreaking for the new science complex is slated for next year. *Ted Smalley Bowen*

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Chad Oppenheim: Miami's man of the hour

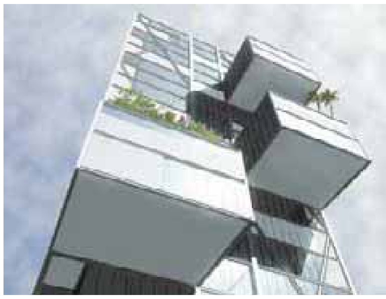
The name Chad Oppenheim is synonymous with Miami's condominium boom. The 34-year-old architect, who founded Oppenheim Architecture & Design in 1999, has completed 18 projects, including residential high-rises like Ten Museum Park, 3 Midtown Miami, and Ilona. His newest projects include one of the tallest towers in Miami and a condo unlike any in the city.

Set to break ground in 2007, Cube condominium, in Miami's design district, is structured in modules to allow residents to configure dwellings both vertically and laterally. The $30 million project features 112 residences and street-level retail. In partnership with Richard Meier, FAIA, and the sons of I.M. Pei, FAIA, Oppenheim is also designing a pair of towers rising from a multilevel platform in Downtown Miami. Dubbed Lynx, each tower features three facades and blends offices, retail, condos, and hotel rooms. The $300 million, 70-story project is set to break ground in mid-2007.

So what makes Oppenheim such a hot commodity in the area? According to local architecture critics, it's a combination of talent, marketing savvy, and excellent timing—Miami has recently experienced an unprecedented boom in condominium building, although the housing market here is just beginning to cool.

The old Miami School, points out Adam Druzen, director of architecture at Florida International University, was a blend of high-end luxury living and cookie-cutter developments. Oppenheim's buildings transform this aesthetic from static boxes to dynamic, light-filled spaces with active rooftops, elevated swimming pools, and lush gardens. It's a combination of edginess and hedonistic comfort that's appealing to the pleasure-oriented generation here.

"I want to prove you can create sensual architecture that works from a business standpoint," says the architect. J.F. Lejeune, a professor at the University of Miami's School of Architecture, says Oppenheim has "helped put the role of the architect front and center in Miami."



Cube residences (above) will cantilever off the building. Lynx's towers (below) will soar.

Oppenheim, a native New Yorker, is now setting his sights beyond residences, and beyond Miami. He is designing his first gallery space for the city's Emmanuel Perrotin Gallery; a renovation of an existing 1959 Miami Modern showroom. He had also been commissioned to design a $1 billion hotel/condo for The Hard Rock Hotel & Casinos in Las Vegas, but that project was recently shelved for budgetary reasons.

Jennifer LeClaire

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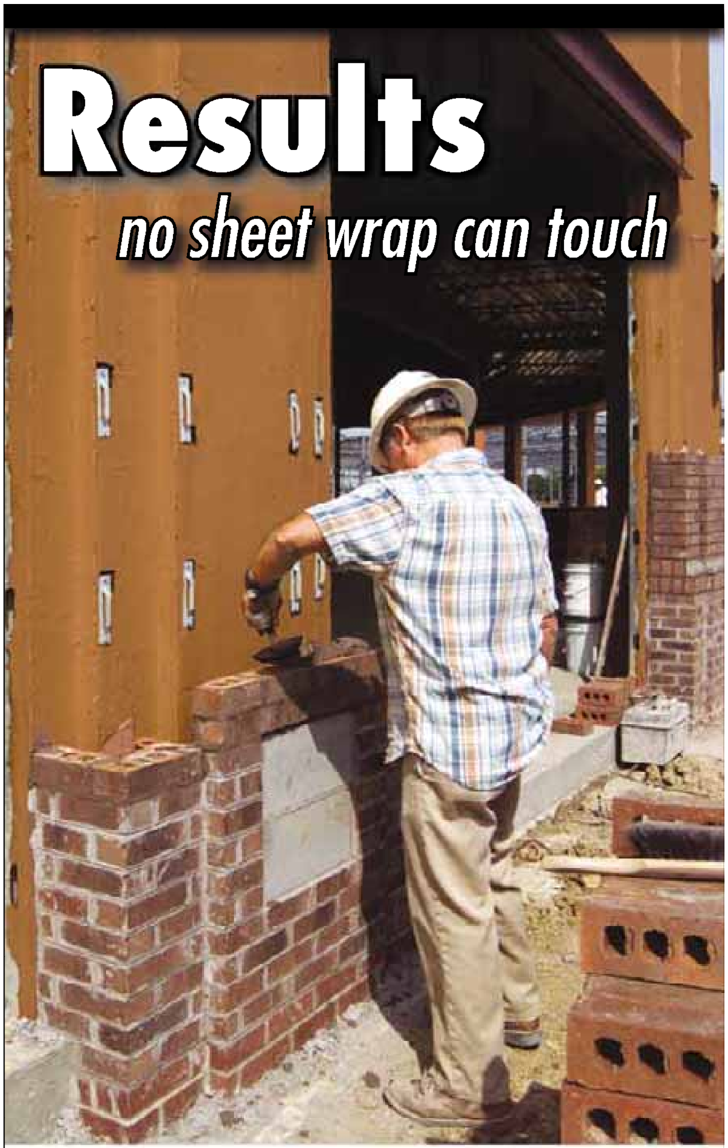
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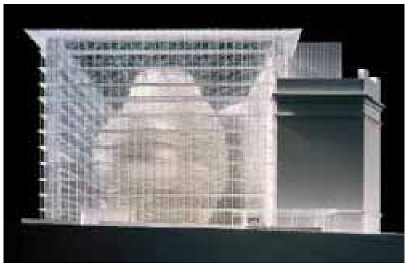
New meeting space being designed for E.U.

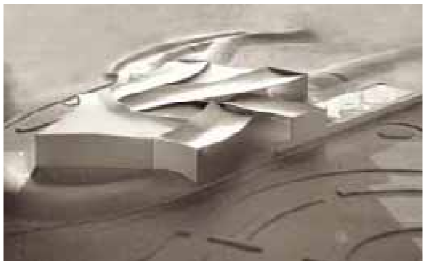


A design has been selected for a new meeting space for the European Union in Brussels. The building, called the Residence Palace, will supplement the adjacent 1927 Palace Complex, designed by architect Michel Polak, which now serves as E.U. Council headquarters. The winning competition entry was submitted by the architecture firm Samyn and Partners of Brussels, engineering firms Studio Valle Progettazioni of Rome, and U.K.-based Buro Happold.

The 645,000-square-foot building will include a press briefing room, a large, 250-seat conference room, 28 translation booths, and a dining room. Samyn and Partners principal Phillippe Samyn describes the steel-and-concrete-frame structure as a "lantern," due to its glowing, glass-box appearance, created by facade layers of both translucent and transparent glass. The programmatic area will occupy a bulbous, multistoried cylinder in the center of the box, and a lighting scheme will change the color of the glowing lantern at night.

Sunlight will enter the private meeting hall through skylights in the center of its ceiling. This hall will be enclosed by a double-skinned facade, whose outer skin will be made of oak-frame windows alluding to the 25 countries in the union. This will gesture toward the "incredible cultural patchwork" of Europe, says Samyn, and will allow the architect to champion environmental protection to the council members. The windows will also provide an acoustical barrier from street noise, and another layer of thermal insulation.

The Belgian government is paying about $240 million for the project, which is scheduled for completion in June 2013. *Sarah Cox*



Swooping green roof highlights new Holl design

The Herning Center of the Arts in Jutland, Denmark, has announced that Steven Holl Architects will design its new center. The 72,000-square-foot building will incorporate the institution's art museum, and house its MidWest Ensemble for chamber music and its Socle du Monde biennale exhibition.

The curving panels of Holl's prominent "green roof" are stressed-skin structures made of carbon fiber strands with a resin matrix. They contain a layer of sedum, a plant mixture that contains several species suitable for green roofs, on their exteriors.

The roof's swooping planes, which allow natural light into the building, were devised to create lively landforms for the otherwise flat landscape of the region.

To further connect the roof to the groundscape, the architects plan to allow it to be occupied in places. A geothermally sourced HVAC system and recycling of graywater add to the green theme. The project is estimated to cost $19 million, and is scheduled for completion in 2007. *S.C.*

IMAGES: COURTESY SAMYN AND PARTNERS (TOP); STEVEN HOLL ARCHITECTS (BOTTOM)

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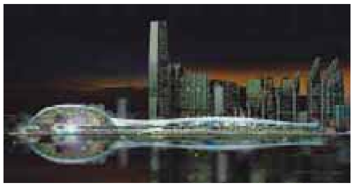
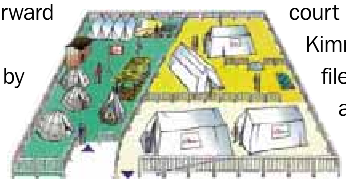
News Briefs

Foster's canopy scrapped in Hong Kong Norman Foster's giant glass canopy for the Hong Kong government's $5 billion West Kowloon Cultural Complex (WKCC) [RECORD, March 2005, page 30] has been scrapped. The roof, the centerpiece of the complex, was first proposed in 1999 and has been mired in controversy ever since. It failed to win public support and interest from the three short-listed developers.

Foster's 390-foot-high, undulating glass roof was to cover at least 55 percent of the complex's 100-acre site, and was estimated to cost more than $500 million. It was criticized in a recent public review as "expensive and environmentally unfriendly." The public also raised concerns about putting all of the project's arts facilities, including four major museums, under one roof, and awarding the whole site to a single developer to build all at once. The WKCC was also to include theaters, and other performance venues, such as an amphitheater and open piazzas.


A rendering of the undulating roof.

The government responded by revising its requirements last October, so that the winning developer could only build on half the site and was required to pay $3.87 billion up front. This caused all three developers to withdraw in mid-February. The government has since insisted the project will go forward eventually and will review these issues by September 2006.
Shirley Chang


The planned exhibition installation.

Tent city in Central Park The living conditions endured by the world's refugees are difficult to comprehend. *A Refugee Camp in the Heart of the City*, an upcoming exhibition created by Doctors Without Borders, aims to change that. The installation will feature an 8,000-square-foot tent city placed in New York's Central and Prospect Parks next September.

Elements will include a shelter area with small fabric tents, as well as makeshift structures made of metal and wood. The exhibition will also include examples of a medical clinic (with medical supplies), a structure where water and food are supplied, and temporary latrines.

Doctors Without Borders specializes in emergency medical treatment, but also provides emergency shelter when necessary. According to a 2005 survey by the U.S. Committee for Refugees and Immigrants, over 33 million people are now living in refugee camps.

The exhibition was created in France 10 years ago and has visited 10 countries, making an initial trip to New York in 2000. Next fall the show will also be placed in parks in Atlanta and Nashville. *S.L.*

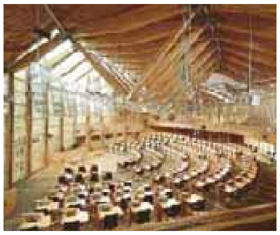
Viñoly and Kimmel Center settle suit Lawyers from Philadelphia's Kimmel Center for the Performing Arts and New York–based Rafael Viñoly Architects (RVA) have reached an out-of-court settlement of the Kimmel's lawsuit filed last November against RVA. The suit alleged that the firm negligently executed its responsibilities during the design and construction of the concert hall, sending project costs over budget by more than $23 million. In a jointly issued statement dated March 3, neither admitted liability or fault. The terms of the settlement are confidential. RVA declined comment, and Kimmel representatives did not return phone calls.
Joseph Dennis Kelly

PHOTOGRAPHY: COURTESY FOSTER AND PARTNERS (TOP); DOCTORS WITHOUT BORDERS (BOTTOM)

Scottish Parliament roof failure investigated The Scottish Parliament debating chamber closed on March 2, when a 12-foot-long roof strut slipped from its metal housing and swung over the heads of elected officials. The semicircular chamber, which seats the 129 members of the Scottish Parliament, was evacuated.

Arup, the project's structural engineering firm, was called in to inspect the 221-pound beam and a fractured bolt. Materials testing firm Stanger Materials Science will analyze the bolt and laminated-oak beam. During the inspection, parliamentary debates will be held at The Hub, a former religious assembly hall that dates back to the 19th century.

The late Spanish architect Enric Miralles and U.K. firm RMJM designed the $745 million building, which opened in late 2004, three years later than planned. Last year, the building was awarded the Royal Institute of British Architects (RIBA) Stirling Prize. *Robert Such*


The Parliament debating hall.

Protests against WTC Memorial With construction on the World Trade Center Memorial about to begin, victims' families and others recently began pressing for its redesign. On February 27, they gathered at Ground Zero, charging that the current plan is unsafe and disrespects victims by placing their names below street level. The protesters—including victims' family members, police officers, firefighters, and emergency workers—charge that placing the museum and the names underground insults the legacy of those who died. They also claim that with only two main ramps out of the complex, the museum will not have enough fire exits. A group called Take Back the Memorial has formed a Web site, www.takebackthememorial.org, and is circulating a petition to stop construction on the project.

The Lower Manhattan Development Corporation, which is overseeing the design and appointed the 13-member panel that chose it, has said that the memorial and museum will have 15 exits, including emergency stairwells. The memorial is scheduled to open in 2009. *S.L.*

Finalists to master plan Pittsburgh Cultural District The nonprofit Pittsburgh Cultural Trust has announced four finalist teams to master plan the city's new Cultural District Riverfront Development. The development consists of a 6-acre site located in Pittsburgh's Cultural District, a 14-square-block area downtown near the Allegheny River. The district is home to five major theaters, as well as restaurants, galleries, and other amenities.

The four finalist teams include the following firms: Koning Eizenberg Architecture; MVRDV; Behnisch, Behnisch & Partner; and Steven Holl Architects.

The winning plan may include residential, retail, restaurants, plazas and parks, public arts projects, performance spaces, and improved access to the riverfront. The trust will announce the selected team this summer. *Jennifer Lucchino*

ENDNOTES

- The Skidmore, Owings & Merrill (SOM) Foundation has established the 50,000 SOM Prize, which will be awarded to a promising student in Architecture, Urban Design, and Design.
- New York's Van Alen Institute named Adi Shamir, a former dean at the California College of the Arts, its executive director.
- In January, Terrence E. O'Neal, AIA, became the first African-American to serve as president of the American Institute of Architects New York State.

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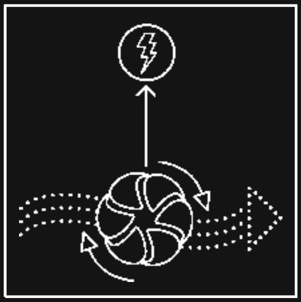

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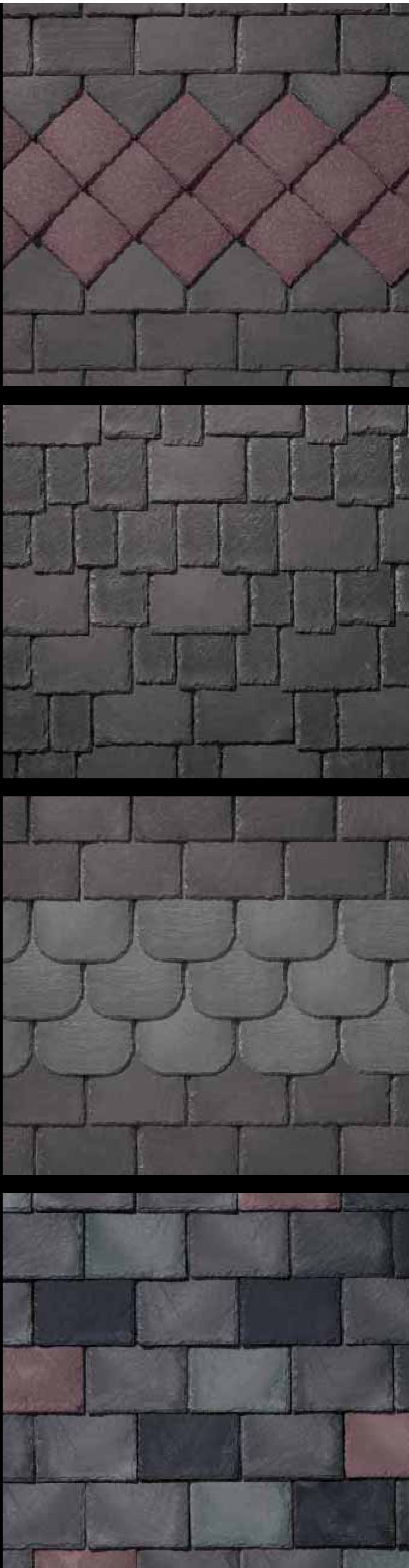

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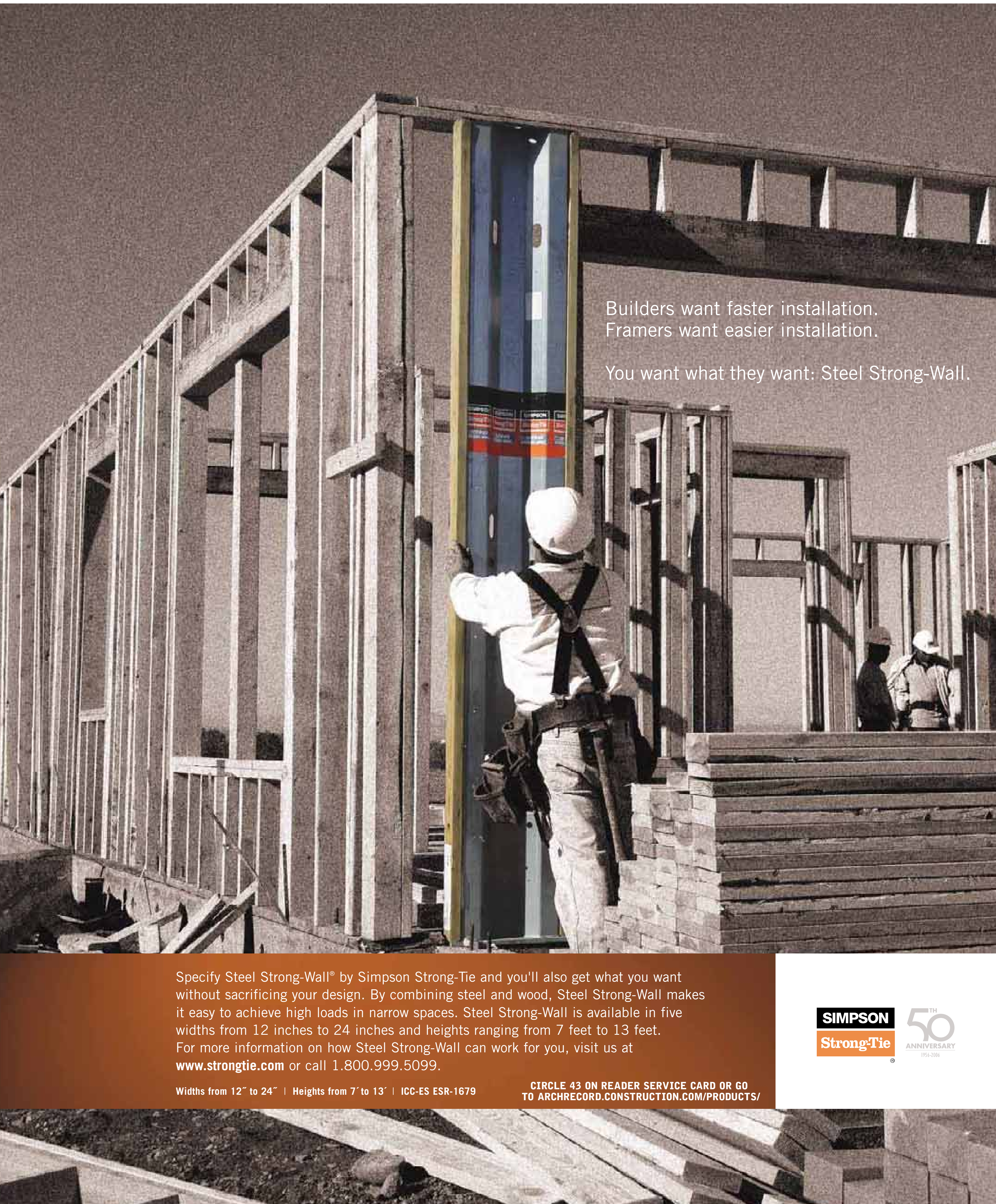

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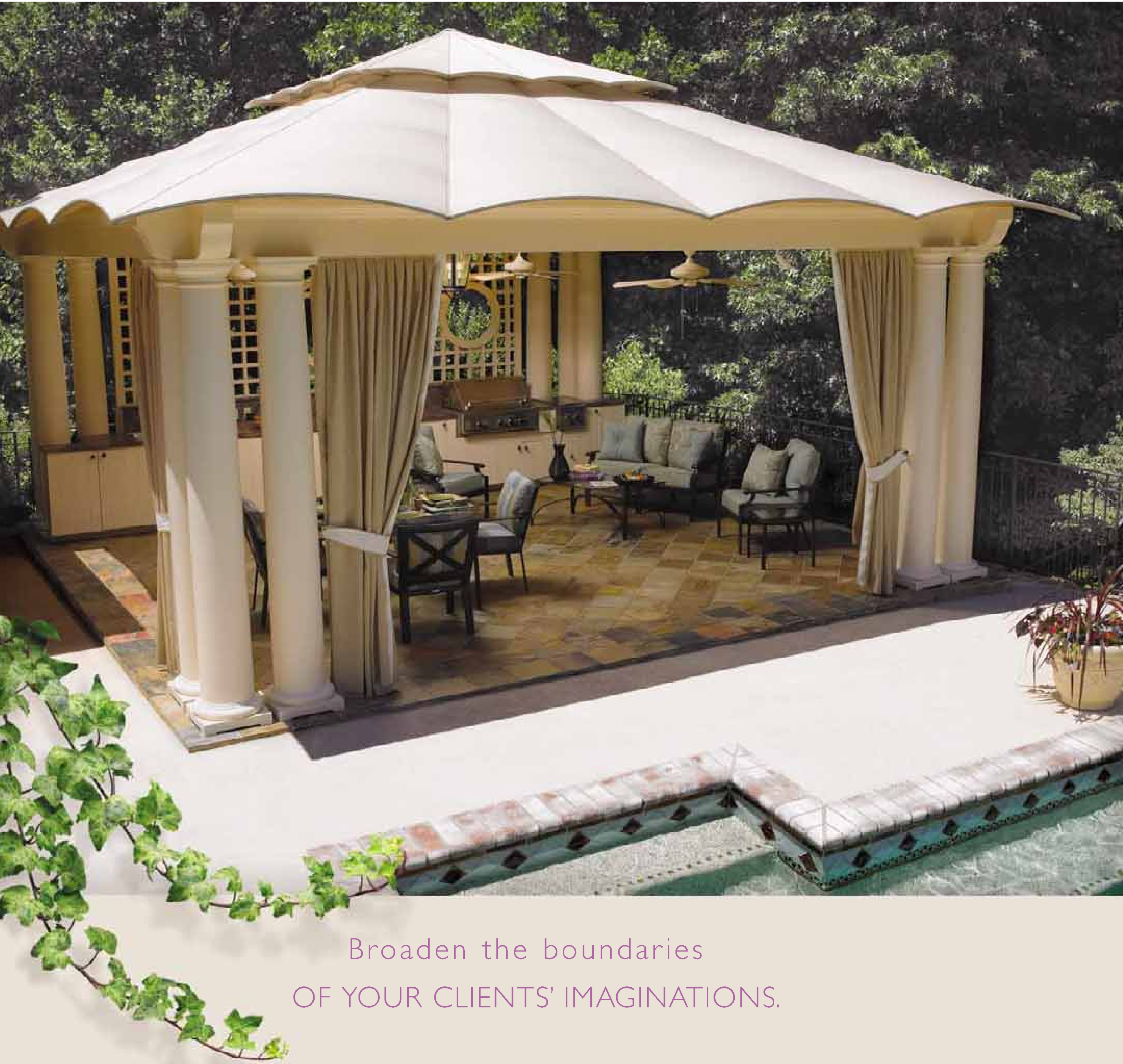

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For and about the emerging architect

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Architects play a role in both the creation and the destruction of buildings, and this month archrecord2 features one architect who has found a mission in artfully documenting abandoned state mental institutions before this dying building type gets destroyed. While Chris Payne stays just ahead of the wrecking ball, Terry Boling considers individual properties of materials. Visit Design, Work, and Live at www.archrecord.com/archrecord2/ for more work by these talented individuals and others.

Design

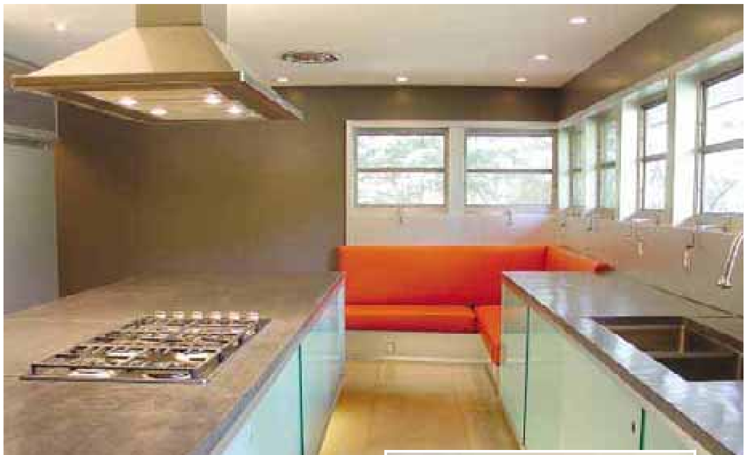
Terry Boling: Making a mark in the Midwest

For Cincinnati-based architect and teacher Terry Boling, AIA, the proof of good architecture lies in creating a project full of material connections—a regional approach focusing on an organic design process that explores and exploits the unique properties of each material used. And, while Boling is a sole practitioner, he doesn't accomplish this experimentation alone. As a full-time professor at the University of Cincinnati's School of Architecture and Interior Design, Boling works closely with a group of students and ex-students. "U.C. has a unique co-op program where students are required to work in the real world for 10 weeks during the semester," says Boling. "That program gives me the opportunity to hire students I've been working with in class, and the students then have the ability to put their learning to use."

"The mark of the maker" is a term Boling says he continues to try to define and make evident in his work, through fabrication of furniture, surfaces, and finishes on-site. Boling admits that working this way doesn't produce quick results, but credits his clients with having the patience to let the process take its course. "We're usually working with shoestring budgets," says Boling, "and what we design isn't paper architecture. Luckily, our clients have been understanding of the process. The restraints have worked in our favor. And Cincinnati is at an exciting place right now. It's a time of rich growth for the city, and a good time to be practicing architecture here."

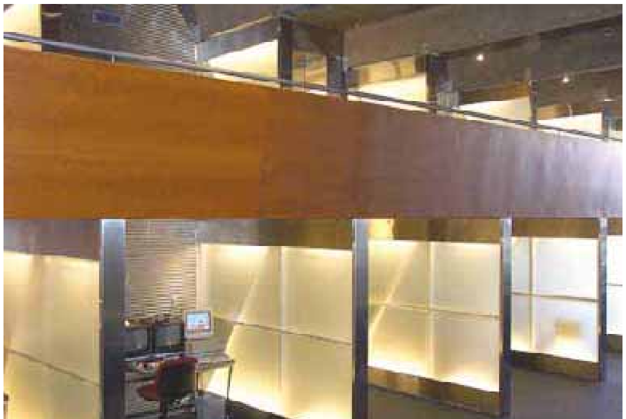
Boling teaches a class about critical regionalism, and his work reflects his thoughts on the topic. "I'm often exploring what it means to be a Midwesterner," he says. "What kinds of materials and techniques can we find that are specific to the Midwest? What does it mean to be working as an architect in Cincinnati?"

Part of that regional approach for Boling is an ethically responsible architecture. "It's right in the middle of everything," he says. "Landfills are mostly composed of construction materials, so it's obvious that we should use leftovers." For one project, a nonprofit facility called Venice Pizza that trains people to work in restaurants, Boling and a group of graduate students actually had a



Nicholson Kitchen, Cincinnati, 2005

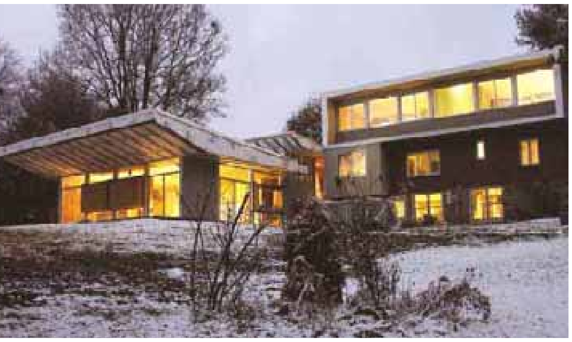
The kitchen is part of an ongoing renovation of a mid-20th-century home. A floating island with base lighting and hand-cast-concrete countertops occupies the center of the room, while custom sliding-aluminum-plate pantry and closet doors line the perimeter.



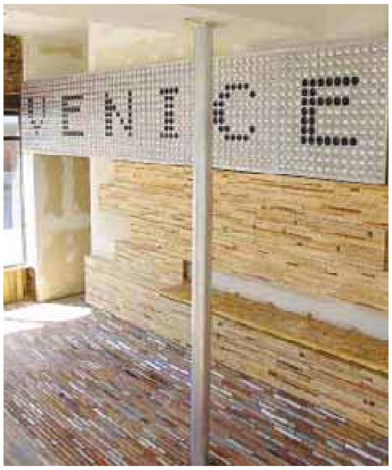
Media Bridges, Cincinnati, 2003

Offices for a nonprofit that offers digital media education and training, the project consists of 8,000 square feet on two floors of a historic building in the Over-the-Rhine area of Cincinnati. Translucent walls and colored concrete contrast with the existing rough brick.

PHOTOGRAPHY: COURTESY TERRY BOLING



Wyoming Loft Addition, Cincinnati, 2006
Renovation to a Cincinnati-suburban bungalow comprising a bedroom and bath connected to the main floor by a new light-well and stair. A ground-floor addition contains living, dining, kitchen, and support spaces.



Venice Pizza, Cincinnati, 2004
Scrap wood, copper pipes, and cut beer bottles were just some of the materials University of Cincinnati students, under the direction of Terry Boling, used to create surfaces and signage for a new pizza restaurant and training facility for a nonprofit organization, located in an existing vacant storefront.

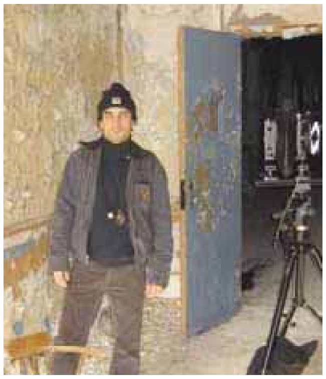
zero budget, which forced them to explore the space between thinking and making. “They got on the phone and found everything they could get their hands on—tile from a company’s excess, crushed beer bottles that the students made into mosaics, leftover wood from construction sites,” Boling explains. “Our discussions revolved around questions of homogeneity and heterogeneity, quilt and mosaic, and even culinary formulations that addressed the idea of leftovers, such as pizza, meat loaf, and soup. It soon became evident that each material treatment would need to have a relationship to the next, both procedurally and aesthetically, for the project to be successful as a collection of components.”

The result exemplifies Boling’s love of textures and visually decadent yet formally clean structures. “We tend to undervalue beauty,” he says. “There’s just not enough beauty in the world.” For Boling’s part, he plans to add more beauty locally, and branch out from there. “I would love to jump scales and broaden my firm’s possibilities,” he says. “But only if I can keep bringing personalization—a mark of humanity—to every project.” *Ingrid Spencer*

For more photos and projects by Terry Boling and his students, go to archrecord.com/archrecord2/.

Work

Christopher Payne: Documenting before their demise

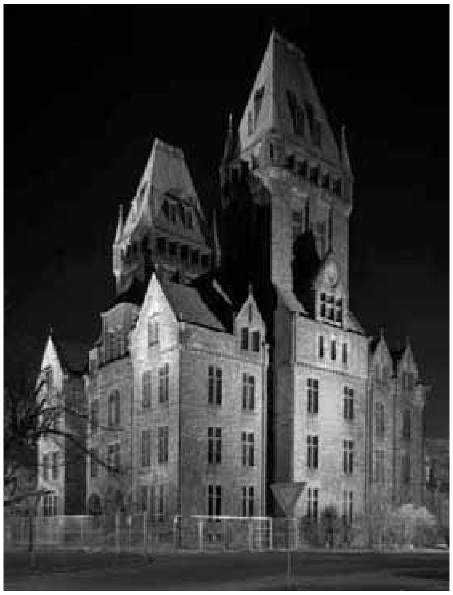


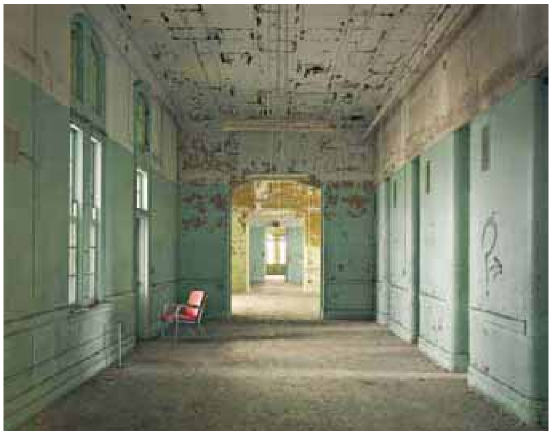
For New York City–based architect and photographer Christopher Payne (right), the only thing depressing about spending days at a time alone with his large-format camera photographing abandoned and decrepit state psychiatric hospitals is that they’ll soon be gone. Often majestic in scale and built on self-sustaining farms where patients took part in working the land, dozens of these hospitals once had a purpose that, according to Payne, was much less creepy then movies and TV would have us believe. “These buildings were designed with optimism,” says Payne, “with craftsmanship, with the idea that the state had a responsibility to help people with mental illness. To see these landmarks demolished … it doesn’t make sense. Greed is behind it, and a lack of vision.”

Creating buildings may be Payne’s day job (he works for Studio Kenji in New York), but photography is what drives him. Just looking at his startling images, some in black and white, some in color, it’s easy to see that Payne is a preservationist at heart, despite the fact that he hates the term. “What bums me is the general apathy and feeling of helplessness in the architectural community,” he says. “Most young architects are only interested in what’s new and hot. To be concerned with preserving the past risks being labeled a square.” Payne admits that others may have a more objective take on the topic, but because he is driven to document, he feels quite in the middle of it. “No matter what quality my photos are,” he says, “they are no replacement for what’s lost.”

Payne’s passion for photographing obscure building types began when, in 1997, he started taking pictures of New York’s substations—the power stations that ran the New York subway systems until the 1980s, when they became obsolete. His photos, along with histories and plans, became a book in 2002 (*New York’s Forgotten Substations: The Power Behind the Subway*, Princeton Architectural Press). His photos of hospitals will also become a book, complete with plans. Payne has a knack for getting into these dying building types, without artifice. “I tell the truth,” he says, “and the officials in charge often feel the same way I do. These buildings are icons of a welfare state—institutions created to protect and take care of people. They’re like castles, and I’m just one step ahead of the wrecking ball.” *I.S.*

For more, visit archrecord.com/archrecord2/ or www.chrispaynephoto.com/.





Chris Payne’s photos capture the faded majesty of the Buffalo State Hospital (above left and right), designed in the late 1800s by H.H. Richardson, with associate architect Stanford White. The building’s fate is still uncertain.

PHOTOGRAPHY: COURTESY TERRY BOLING (TOP TWO); CHRISTOPHER PAYNE (BOTTOM THREE)

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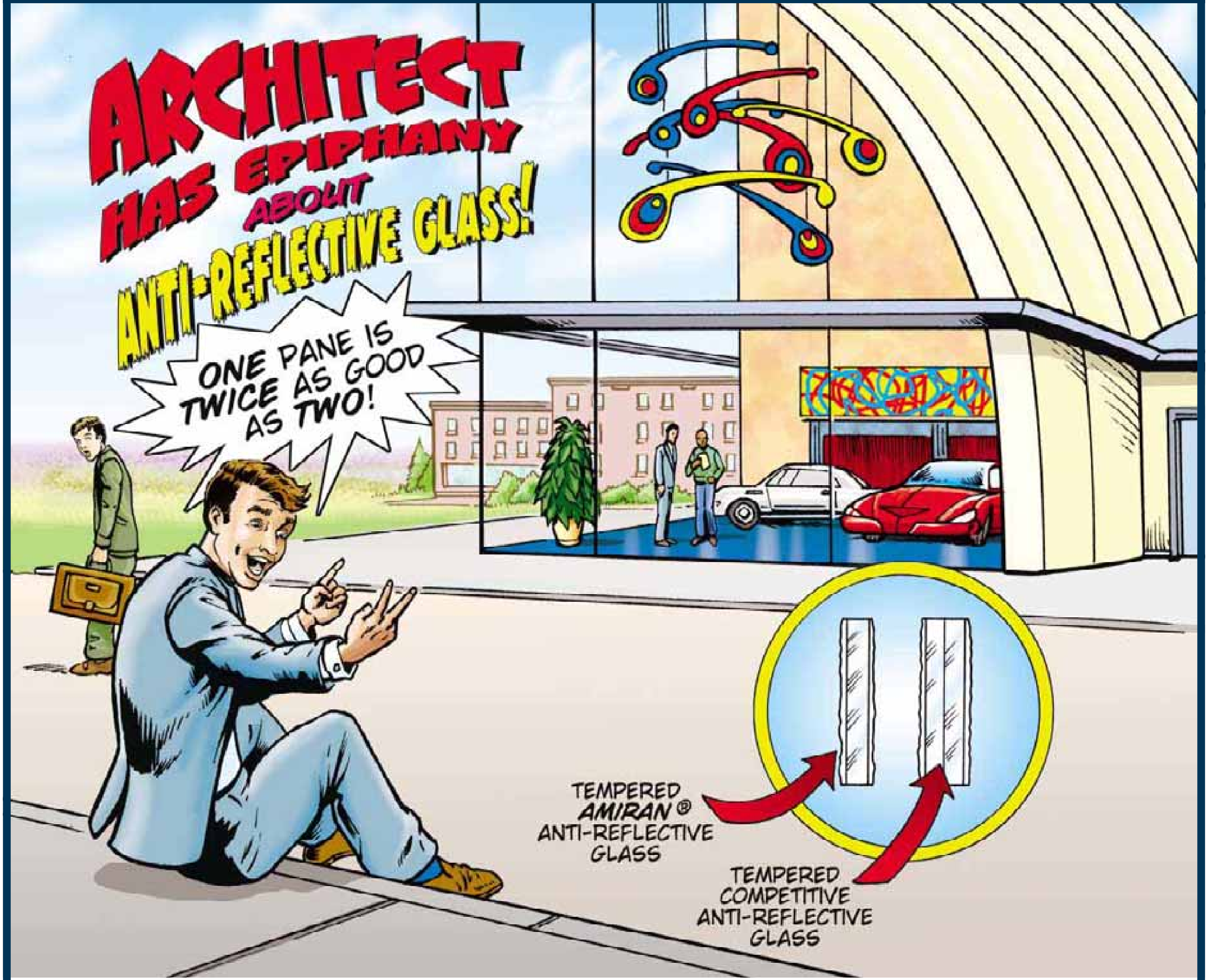
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Phantom pain: A neighborhood lives on after its destruction

Critique

By Robert Campbell, FAIA

In 1962, in the Boston neighborhood called the West End, wrecking crews demolished the final buildings. It was a carpet-bomb act of urban renewal, an amputation by the city of its own flesh.

The 12,000 residents, nearly all of them low-income, were ruthlessly kicked out of their homes and scattered to the winds. Promises were made that they would be able to come back. But few could afford the new elevator apartments.

Two well-known writings came out of the experience, *The Urban Villagers*, by Herbert Gans, a book about the neighborhood's good qualities, and "Grieving for a Lost Home," by Marc Fried, an essay on the psychology of the West End exiles.

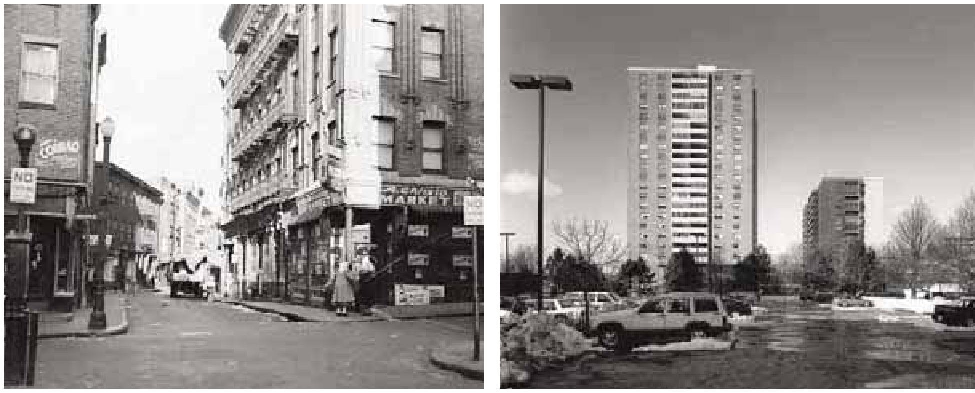
What fewer people know, and what I find deeply moving, is the fact that today, 44 years later, the former residents still think of themselves as a community. Every Tuesday, anywhere from 20 to 60 former West Enders meet at the Meadow Glen Mall in the suburbs to talk about their old lives in the neighborhood. For many years, they produced a citizen-access TV interview show. They have made 70 hours of video oral histories. They have just started a museum on an edge of the old neighborhood (it became a middle-class enclave of mid-rises, which looks like a displaced fragment of Miami Beach).

They still maintain, through voluntary contributions, a quarterly newspaper, the *West Ender*. Besides news items, the *West Ender* publishes a dozen or so snapshots and 40 or 50 letters in every issue, almost all of them recollections of the old days. *Forty-four years later.* It's a story that I believe may be unique in American history.

What would make a neighborhood, viewed at the time as a slum and labeled as "blighted," become so resonant in the memory of its people?

The West End was a community of mostly second-generation immigrant families. The largest groups were Italian, Irish, Jewish, and Polish, but there were others. It occupied a downtown site along the Charles River.

When federal urban-renewal money became available, city officials and developers looked lustfully at the site. The razing process was brutal. If you owned a building, the day the city took it by eminent domain was the day your tenants started paying their rent to the city, rather than to you, and on that same day you too had to begin paying rent. Owners were supposed to get a fair purchase price, but legalities often dragged out to the point where many took almost nothing.



The dense, intricate nature of the West End (above left) was lost to urban renewal (above right).

A policeman, who regularly patrolled the neighborhood, filmed the demolitions over the months it took to complete them. A video of the film runs at the new West End Museum. The images are difficult to believe. Cranes swung heavy balls into the brick walls of what had been, sometimes until weeks or days before, people's homes. I don't know where the bricks went, but the wood from the demolition was burned in big bonfires scattered around the site. Fire and smoke, emptiness and despair: The images are those of a war zone. "They made us into refugees," says one West Ender today.

Again, though, what's the source of the power that makes this neighborhood live on in so many minds? I'd like to suggest at least four: memory, sensuality, intricacy, and location.

Memory. Towns and their architecture, as many have noted, embody memory. A city is a memory palace, a place where the streets and buildings function as visual cues, reminding us of our own past and the past of our predecessors. We all have private landmarks. Nobody wishes the obliteration of the corner where he experienced his first kiss. Nobody wants to lose the house in which she first became aware of the world.

When they watch the video, the former West Enders are satisfying a hunger for that kind of memory palace. "That's Dutchie," one says, pointing to a cop on the screen who, long ago, patrolled the West End. They talk about other cops: Casey, McCarthy. Obsessively, they identify buildings and sites to one another.

They also try to rebuild the memory palace. Before it was demolished, the West End contained 21 street corners named for soldiers who died in World War II. The corners were called the "hero squares." At each, a plaque was placed on a building wall; for instance, "Angelo Chester Square," with a gold star above the name. When the neighborhood was wiped out, the plaques came down. West Enders never stopped lobbying for their return. This year, the city finally agreed to erect a new memorial to the soldiers of the West End.

Frank Lavine, 81, puts the case

Contributing editor Robert Campbell is the Pulitzer Prize–winning architecture critic for The Boston Globe.

PHOTOGRAPHY: © PETER VANDERWARKER

pretty clearly. “Those guys gave their lives in the military for what was supposed to be democracy, and there was nothing democratic about the razing of the West End,” he says.

The story of the squares is not uncommon. In Tampa, Florida, after World War I, the city created Memorial Boulevard. A sapling tree, carrying a bronze plaque, was planted for each dead soldier. Eventually, as the tree grew, the plaque would disappear inside it. Each tree would be a living memorial to a soldier. A generation later, Tampa widened Memorial Boulevard and cut down all the trees. In 1963, the street was renamed Kennedy Boulevard—not in honor of loved members of a community, but for someone known through the media.

Sensuality. A letter in a recent issue of the *West Ender* contained the following paragraph:

“I used to buy nickel pickles at Klayman’s deli and had to sneak around the back of the Blackstone School to eat them since my mother thought a whole pickle would turn my blood to vinegar … I used to love the smell of Cutler’s Linoleum store … There was also the tailor shop on the corner of Eaton and No. Russell Streets, Minne White’s on Green Street, Gallo’s Bakery on Leverett for the Italian bread, Godfried’s Bakery for sweets when company came.”

The smell of linoleum? The whiff of a tailor shop? These are the Proustian *madeleines* of the West End. The letter reminds us that sensory experience has largely disappeared from our lives, as we limit ourselves more and more to purely visual experiences (or with a headset, aural) that come to us largely from artificial media. You can formulate it as a law: “With every advance in technology, there is a corresponding decrease in sensuality.” A good example is transportation. On a horse, you experience rain and sun and wind, you smell the country or the city, you feel your body bouncing in the saddle. On a train, the world shrinks to a visual film strip running endlessly past the windows. On an airplane, the film shrinks further to a mere image on a screen. Maybe in our future spaceships we won’t even experience gravity. One of the things that fuels the grieving for the West End is the memory, perhaps half conscious, of a world that was not sensorially deprived.

I’ll have to be briefer on my other two qualities.

Intricacy: The West End was dense, and the space between any two things was small. You were always pushed close up to things, whether people or buildings. I think that is one reason why the neighborhood imprinted itself so deeply on the perceptions of its residents.

And *location*: the West End “slum” enjoyed a spectacular location, close to the Charles River and its parks and (then) beaches, close to railroads and subways, close to Boston Common and, just beyond it, the city’s main shopping district. When you ask people in a low-income neighborhood what they’d like, they tend to name things they don’t have: let’s say big-screen TVs and basketball hoops and automobiles. What they often ignore is what they already have, which may be a magnificent location, close to public transit and other amenities—not to mention a low rent and warm neighbors. It is because they are exiles that today’s West Enders are so keenly aware of the virtues of what they once had.

Today, if it had survived, the West End would long ago have unslummed itself, to use a term from Jane Jacobs. It would now be gentrified. Former cold-water flats might be million-dollar condos. That is another kind of problem. But at least the West End’s physical fabric would survive, continuing to embody memory, sensuality (some, anyway), intricacy, and location. ■

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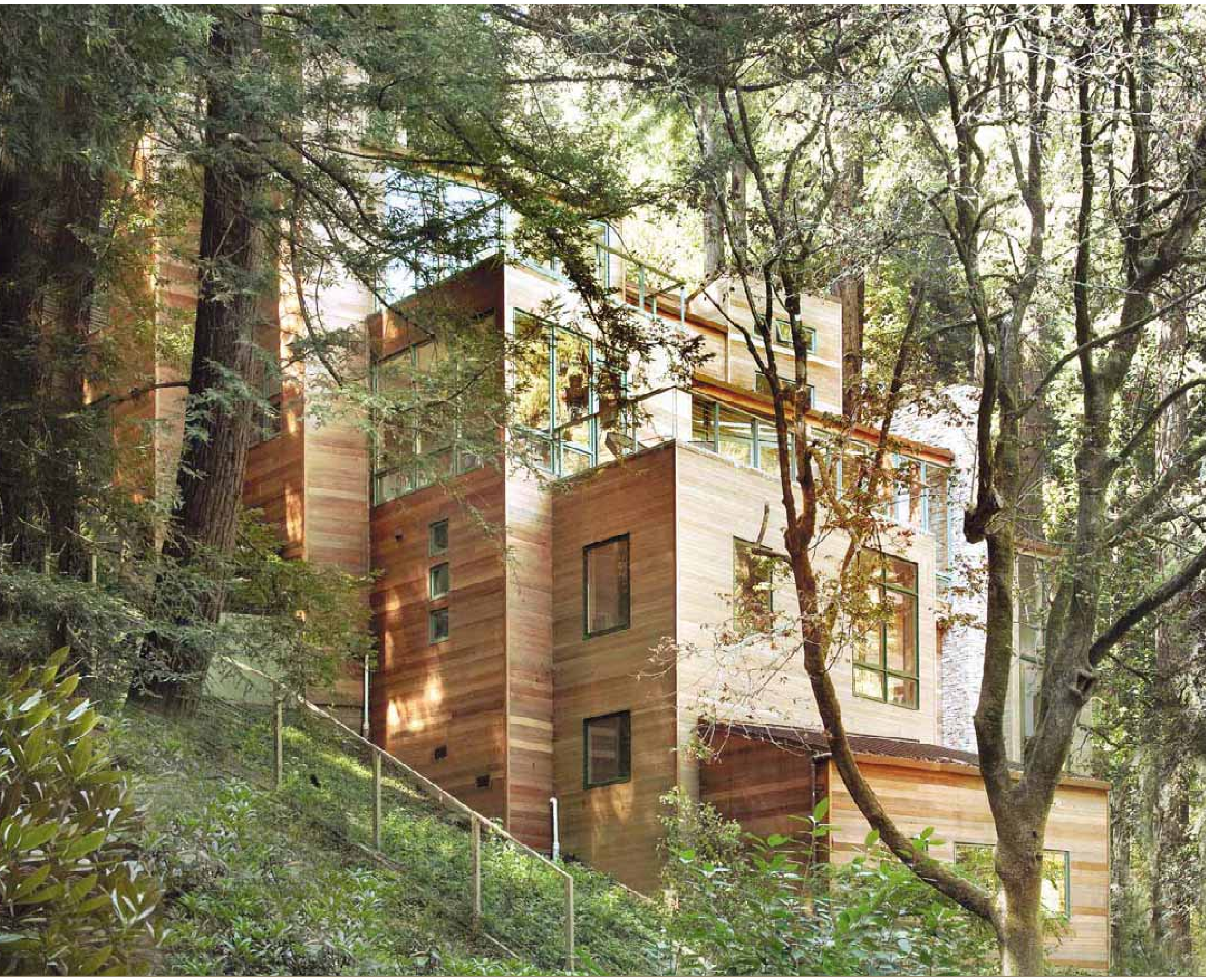

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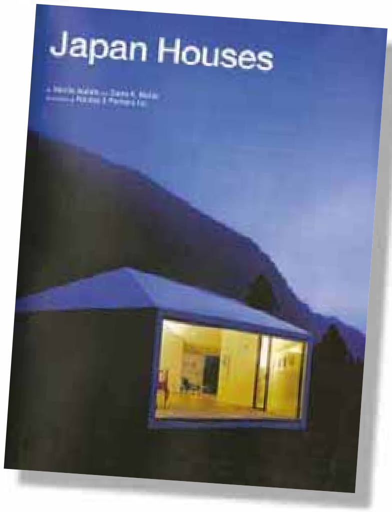
House tours: reading up on residences from around the world

Books

Modern Japanese House, *by Naomi Pollock. New York and London: Phaidon, 2005, 228 pages, $75.*



In this handsome, engaging book, Naomi Pollock does more than just present a group of knockout modern houses in Japan. A special correspondent for ARCHITECTURAL RECORD and a long-time resident of Tokyo, Pollock places the houses and Japanese residential architecture in context—historical, cultural, and social. So, instead of merely going "wow" at a bunch of inventive, elegant, and eye-catching designs, the reader learns where the ideas behind the houses come from. The author discusses the Japanese notion of context in her thoughtful introduction, explaining how it differs from that in the United States or Europe. In Japanese cities such as Tokyo and Osaka, houses often last only about 20 years. So the immediate physical context for any new building is constantly changing and therefore exerts very little influence on design. More important are the cultural and social contexts within which the Japanese live, even as lifestyles and mores change in a country with an aging population and a plummeting birthrate.

Pollock underscores these larger issues by organizing the 25 houses in this book by the way they're lived in and used, rather than their style or location. The five chapters look at the tiny house, the indoor-outdoor house, the multigenerational house, the work-and-play house, and the vacation house. Each chapter begins with an essay examining the key issues and trends architects are addressing in the houses that follow. Readers learn, for example, how the traditional *chanoma*—a multipurpose space at the heart of Japanese homes—has become the combined kitchen-dining-living room found in many contemporary designs. Or how the traditional rural house known as *minka* and urban merchants' houses called *machiya* have influenced modern Japanese architects' approach to indoor-outdoor relationships.

The architects presented in the book fall mostly in the emergent generation of practitioners, designers in their 30s and 40s who have established their reputations only in the past decade or so. So Tadao Ando and Toyo Ito aren't included, but Kazuyo Sejima, Jun Aoki, Shigeru Ban, Hitoshi Abe, Taka and Yui Tezuka, Kengo Kuma, and Shuhei Endo are. Stylistically, the selection favors the crisp, clean Modernism of houses like Sejima's tiny House in a Plum Grove and the formal inventiveness of Ban's Shutter House for a Photographer. But you won't find examples from quirky practitioners such as Terunobu Fujimori, who creates neoprimitive houses that have grasses growing from the roof, and walls made of wattle and clay.

Many of the architects shown in this book are starting to do work outside of Japan and are contributing to a globalization of architecture. "Houses, however, remain particular to place," writes Pollock. "Unique microcosms molded by local customs and social mores, the houses of one country are still distinct from those of another." *Modern Japanese House* does an excellent job presenting and explaining designs from a country famous for being distinct. *Clifford A. Pearson*

Japan Houses, *by Marcia Iwatate and Geeta K. Mehta. North Clarendon, Vt.: Tuttle Publishing, 2005, 240 pages, $50.*

Like Naomi Pollock's book (review above), *Japan Houses* offers a collection of beautiful modern houses from the past 10 years, all given the glamorous, art-book treatment. The 26 houses look great.

Although the two books cover the same ground geographically and stylistically, only one house—Zig/Zag by Nobuaki Furuya's firm NASCA—finds its way into both. This lack of overlapping material points to the remarkable depth of architectural talent working in Japan today.

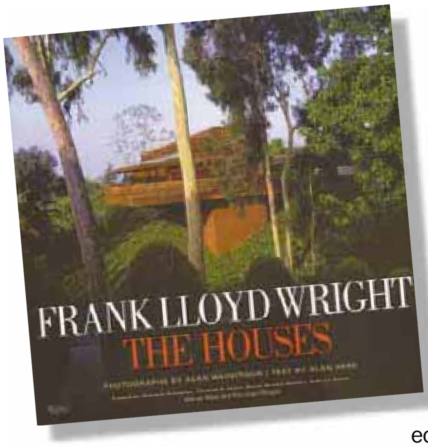
While *Japan Houses* provides a visual feast with gorgeous photography by Nacása & Partners, it doesn't deliver the depth of understanding or analysis that Pollock offers her readers. The introduction by Mehta relies too much on generalities, such as, "A home is, above all, an opportunity for deepening our living experience," and too little on particulars that support such statements. The authors don't provide any thematic framework, so the houses follow one after another in no particular order.

The quality of the houses, though, is uniformly high, with examples by Manabu Chiba, Jun Aoki, Taka and Yui Tezuka, Makoto Tanijiri, and Makoto Shin Watanabe & Yoko Kinoshita. The book also provides a useful index of the architects, including contact information, selected projects, and short biographies. *C.A.P.*

Frank Lloyd Wright: The Houses, *by Alan Hess, with Kenneth Frampton, Thomas S. Hines, Bruce Brooks Pfeiffer, Alan Weintraub (photographer). New York: Rizzoli, 540 pages, $75.*

Books

If all the books written by and about Frank Lloyd Wright were placed end to end, they would reach from here to, well, Taliesin. Among them are biographies (by Ada Louise Huxtable, Meryle Secrest, Brendan Gill, Wright's daughter Iovanna, and his wife Oglivanna); treatises on Wright's design and theories (by Vincent Scully, Peter Blake, and Henry-Russell Hitchcock); collections of his writings and drawings; and books about his early years, the Japan years, the lost years, the lost buildings—not to mention books about his interiors, furniture, stained glass, screens, and fireplaces.



Enter Rizzoli, with a new doorstop of a book called *The Houses*. It is outstanding, carried largely on the merits of Alan Weintraub's color photographs and a level of reproduction that does them justice. In most of the exterior shots, long shadows emphasize the architecture's ground-embracing forms, just as Wright intended. Yet, it is the quality of lighting in the interior photos that is most impressive. Supplemental light sources are nowhere apparent, yet the dark areas retain sufficient information to avoid photo black, as they call it in the printing trade. Plans of 20 representative houses, reproduced on four pages at the back of the book, are astonishing in complexity and variety. Those pages are followed by a list of houses dating from 1889 to 1961, many of the entries accompanied by thumbnail photos that explicate Wright's creative proficiency.

Alan Hess's explanatory essays frame the work in meaningful eras and categories. Essays by familiar names, including Kenneth Frampton, Thomas S. Hines, Bruce Brooks Pfeiffer, and Wright's great-grandson Eric Lloyd Wright, are mostly just about right. *Allen Freeman*

Florida Modern: Residential Architecture 1945–1970, *by Jan Hochstim, New York: Rizzoli, 272 pages, $55.*

Florida's fragile, elegant early Modern architecture has been comparatively uncelebrated, even in a period of intense interest in the decades immediately following World War II. The notable exception was, of course, Paul Rudolph, who lived in Sarasota in 1940 and 1941 and returned after the war to produce works of enormous delicacy and delight before leaving in 1958 to become dean of architecture at Yale. The Sarasota School (as it came to be called) eclipsed inquiries into other postwar architecture in Florida.

Jan Hochstim's *Florida Modern*, with a fine selection of contemporary photographs by Steven Brooke, goes far to redress the oversight. Hochstim, a professor at the University of Miami School of Architecture, notes that the postwar Florida house did not necessarily "reflect the prewar European concern for social significance and functionality," but rather, it was based on a fierce desire to experiment with materials and forms responsive to a hot and unyielding climate. Thus came houses with deep, overhanging flat roofs, louvered windows, and cross ventilation. Before air-conditioning became the norm, houses were wrapped around courtyards or ensconced within a larger screened enclosure, as in Igor Polevitsky's 1949 Birdcage House.

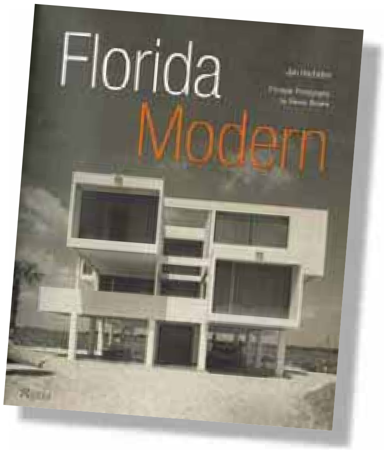
These houses are finally getting their due. Many that survived have owners committed to preserving them. Hochstim has documented almost 100 houses in his statewide study, which is enhanced by informative text and an appealing design, itself an ode to the graphics of the era. *Beth Dunlop*

Modern American Houses: Fifty Years of Design In Architectural Record, *edited by Clifford Pearson. New York: Harry N. Abrams, 2005, 296 pages, $50.*

Modern American Houses is an honest book. Neither a museum exhibition catalog freighted with bold (and potentially overreaching) polemics, nor a drool-inducing, fruit-bowl-laden fancy-house extravaganza, it turns a selection of projects from 50 years of this magazine's annual *Record Houses* issue into a reflection on the evolution of residential architecture.

As in an old high school yearbook, among these houses are some funny haircuts and some staggering beauties. But original photography and project texts and an acknowledgment of historical tastes in the selection of projects (however embarrassing they may seem today) allows the book to reveal the magazine's surprising trepidations and enthusiasms over the past 50 years. For example, about Ulrich Franzen's 1956 house for his family in Westchester, the editors wrote, "We must admit that occasionally we are startled by its daring." Today it would be totally at home in the pages of *Design Within Reach*. Conversely, Allan Greenberg's 1986 Mt. Vernon-inspired farmhouse in Connecticut gets an enthusiastic pass in its project text by Paul Goldberger, if only because its Andy Warhol portrait of Marilyn Monroe above the mantel "prevents this house from becoming cloyingly 'Colonial.' "

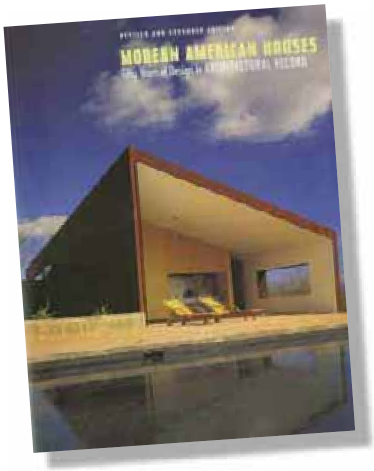
But in all the projects, and in the short decade-by-decade essays, a consistent theme emerges. There are undoubtedly some blips, but *Modern American Houses* makes the clear argument that the story of residential architecture since WW II describes the triumph of Modernism. *Andrew Blum*

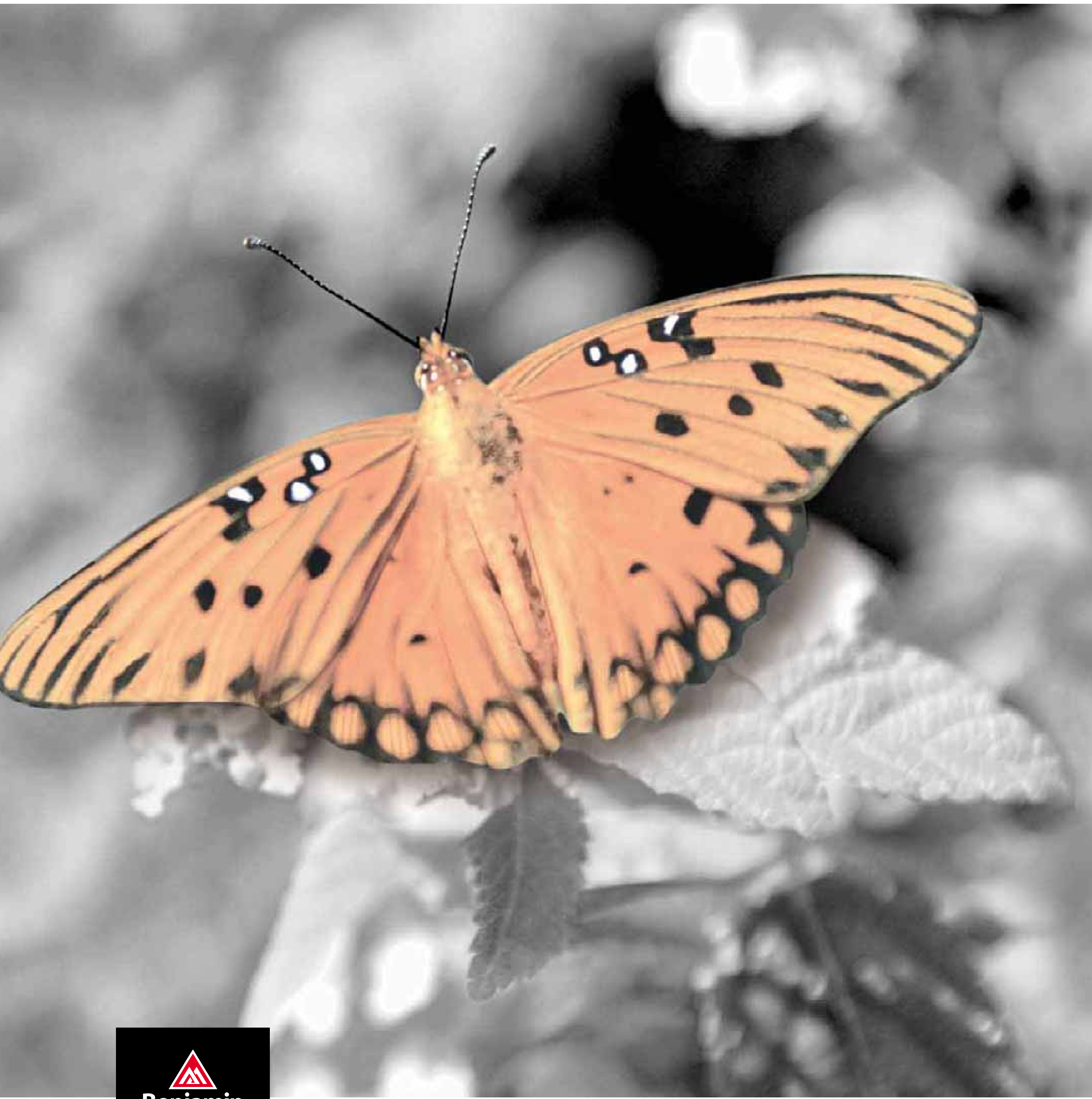


Art/Invention/House, *by Michael Webb. New York: Rizzoli, 2005, 320 pages, $75.*

Drive through almost any affluent suburb and you may conclude that most rich people aspire to be Donald Trump. Architectural journalist Michael Webb here provides an antidote for such gloom, showing 40 new and recent houses by good and great architects.

Each of the houses—most in North America and Europe, plus scatterings in Australia, Japan, Mexico, and Brazil, and one each in Ecuador and China—seems rooted in one or more of Modernism's strains. Charles Gwathmey's white house in Marin County, though tailored to suit a precipitous slope, looks as Corbusier-rational as the one Gwathmey designed for his parents 40 years ago on Long Island. Also in Marin, Arizonan Will Bruder shows his understanding of





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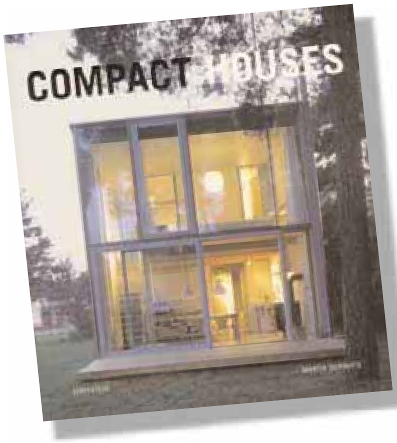
Bay Area Modernists Maybeck and Esherick (Webb's observation). And out from London, Graham Phillips, Norman Foster's managing director, convincingly displays white Miesian Minimalism in a Wrightian pinwheel plan.

Webb shows that industrial materials are still hard at work on a domestic scale, even on larger budgets, as in New South Wales, where Glenn Murcutt's 80th house, at 6,000 square feet, is as robust as his much smaller ones from the 1980s. Similarly, audaciously concocted plans remain alive, as in Brookline, Massachusetts, where Atlantans Mack Scogin and Merrill Elam slammed together conflicting ideas with seemingly cohesive results.

Webb shows a steady eye and a clear head for writing. Each house gets a graceful little essay of relevant facts. The book design is low-key and reader friendly, including plans and occasional conceptual sketches. Some of the photos are pushed a little beyond their digital capacity, but that's a minor drawback in a very good book. *A.F.*

Compact Houses: Architecture for the Environment, *by Cristina Del Valle. New York: Universe Publishing, 2005, 420 pages, $29.95.*



As the size of new homes bursts the boundaries of good sense and sensitivity, this study offers 50-plus compact houses, their small spaces designed efficiently and with flair. Ingenious solutions that make spaces look larger and include furniture doing double duty—seats containing storage space, closets hidden in wide walls—are particularly valuable in cities where land is scarce and costly. Hence many of the book's urban houses are in Japan. In Tokyo, for example, the 720-square-foot Slit House by C Matsuba/Tele-Design combines traditional and contemporary materials and has roll-up and folding exterior bamboo screens over translucent cladding, providing visual interest and privacy. Still smaller is Hiroaki Ohtani's 355-square-foot Layer House in Kobe, built of widely separated horizontal boards admitting diffuse light. But in Vienna, for example, there's Thaler, Thaler Arkitekten's Haus P, a 1,076-square-foot residence with an interior patio that brings light and a feeling of space into each room. Del Valle points out that in nonurban situations, smallness often yields unconventional solutions, as with Cooperativa Uro1.org's mass-produced, inexpensive M7 prototype in Valparaiso, Chile, and Hans-Peter Lang's residence for Claudia Bruckner in Rankweil, Austria, that maximizes space by varying ceiling heights and surface levels within a single area. The book also showcases additions, cottages, and houses that can be opened to expand into the landscape. The text is short, the pictures descriptive, and the book an appropriately compact 8 by 8 inches square.
Andrea Oppenheimer Dean

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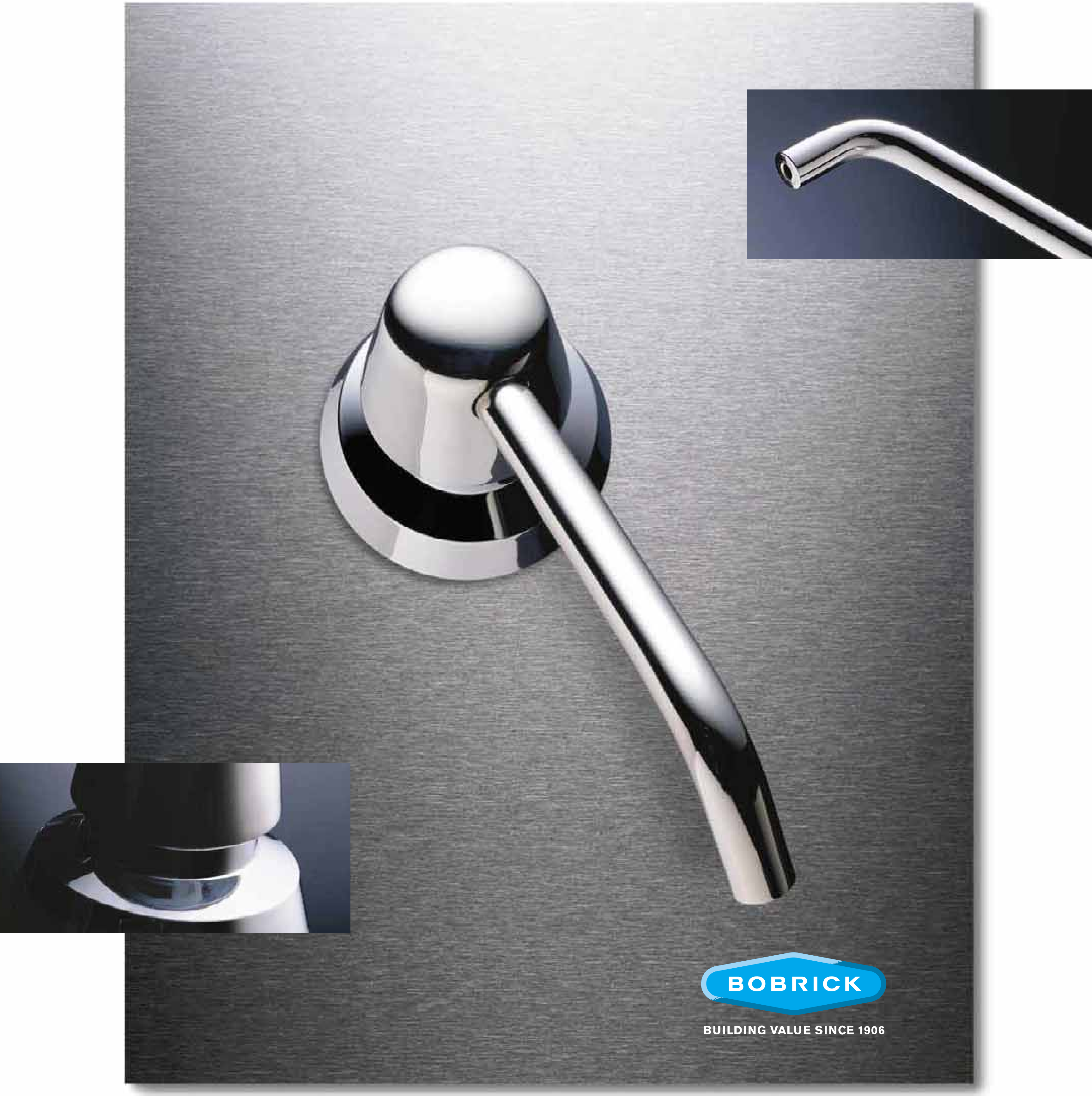

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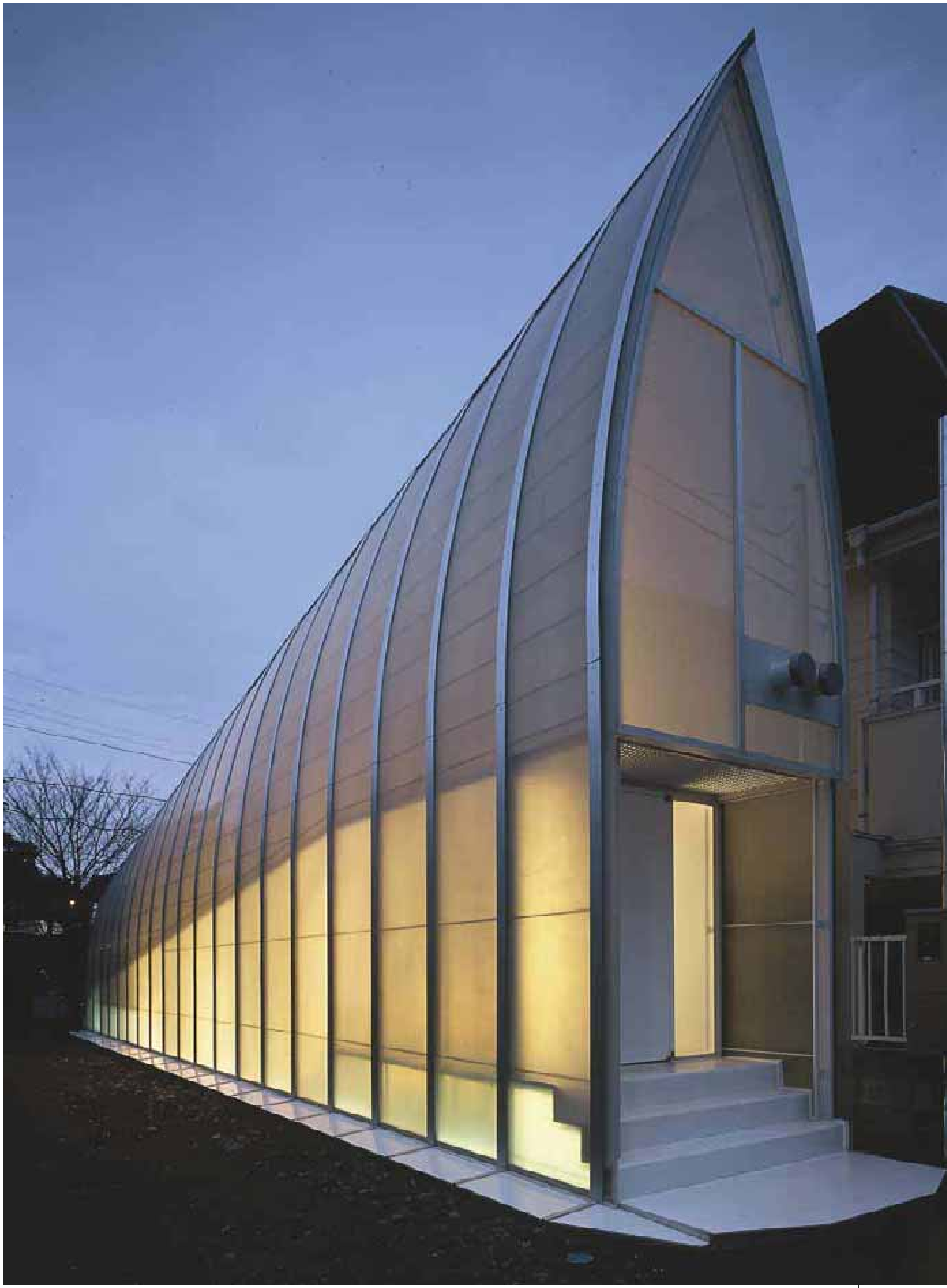
Snapshot



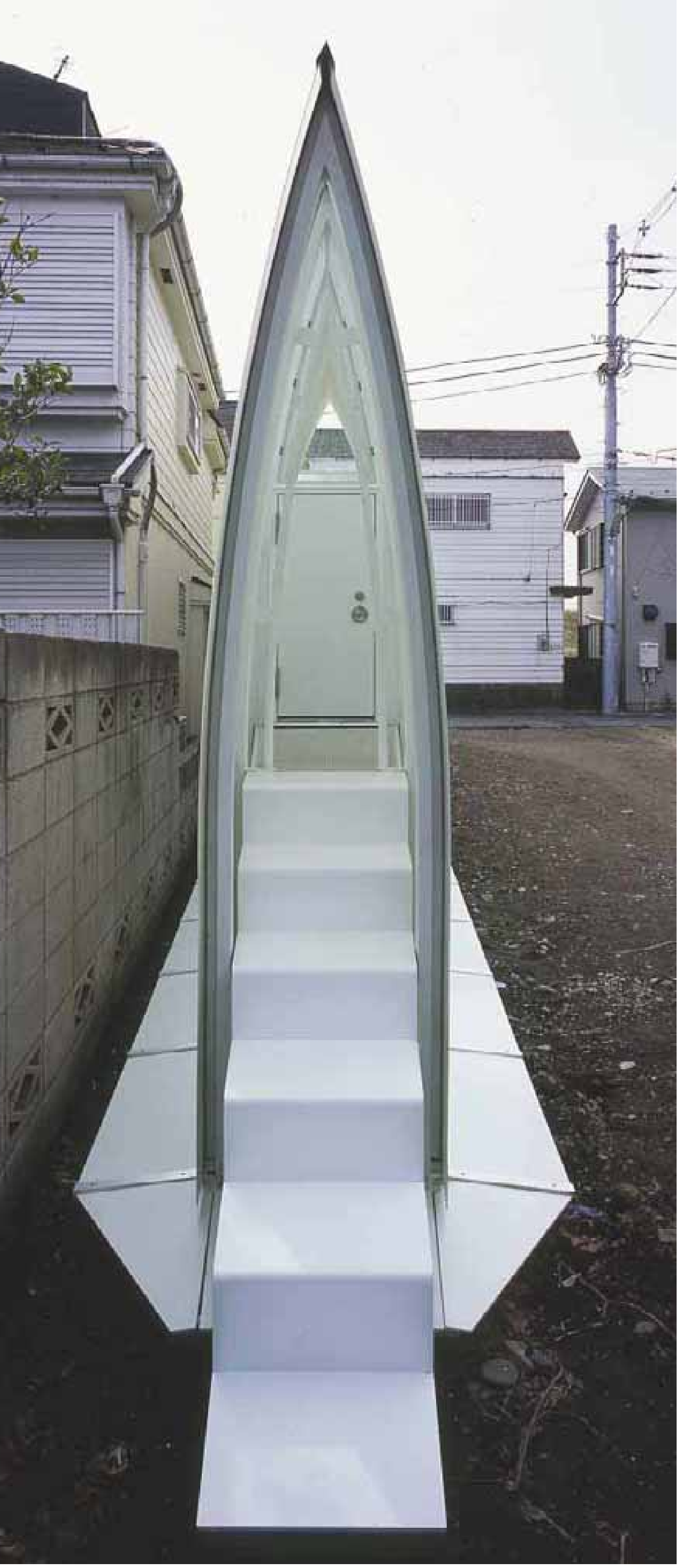
By Naomi Pollock

Neo-Gothic arches soar over a mere sliver of a site

PHOTOGRAPHY: © MAKOTO YOSHIDA

In Tokyo, where property values are among the world's most exorbitant, zealous homeowners build on just about anything. But the sliver of land in suburban Tokyo proposed by a 30-something couple for their future dream house gave pause even to avant-garde architects Yasuhiro Yamashita and Masahiro Ikeda. "My first reaction was that they ought to ask for a price reduction," says Yamashita, chuckling. His second reaction was Lucky Drops: a 98-foot-long, tapered tube of space, defined by a taut, reinforced-fiberglass skin and a skeleton of 20 pointed steel arches.

Since Gothic arches evoke cathedral architecture, these pointed forms give Lucky Drops a whiff of grandeur, especially where the tallest arch soars to 20 feet and frames the front door. But just beyond the threshold, that impression quickly vanishes. The view from the entry foyer, set on a metal-mesh platform, extends all the way to the other end of the 237-square-foot dwelling. In this single, continuous space, the living area, kitchen, and glass-enclosed bathroom line up submarine style. Setting the floor level about 4 feet below grade enabled the designers

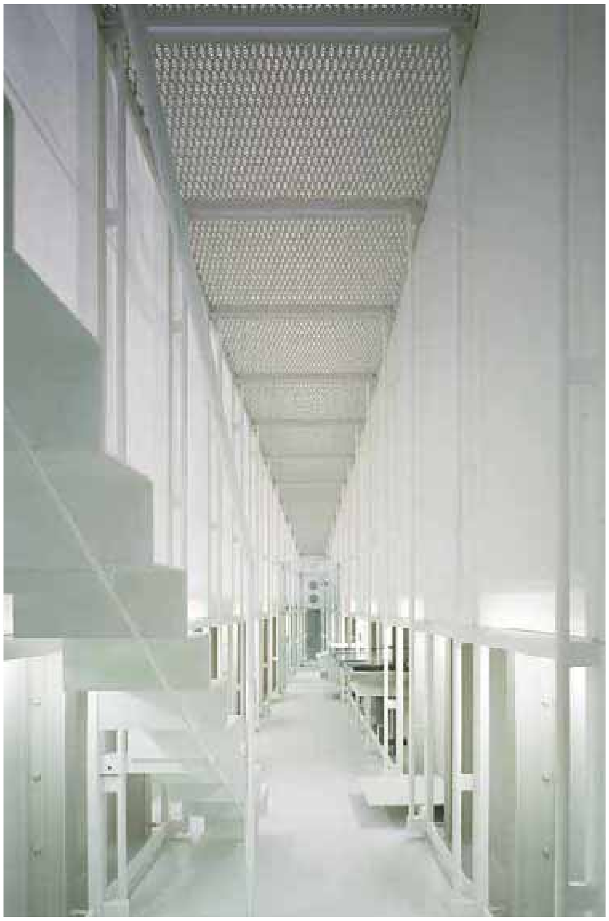


to insert a loftlike sleeping area overhead. It leads into a long storage space that slopes down to the back door, where the house narrows to a mere 3 feet across. The upper level's metal-mesh floor lets light, air, and sound filter through while also acting as a flat brace to stabilize the structural ribs.

Besides capitalizing on the site's length, Yamashita and Ikeda made the most of its width. Dropping the floor level enabled them to circumvent the bilateral, 1.5-foot setback requirements, which do not apply to construction below grade.

The house's most astonishing space-saving device is its 0.12-inch-thick, milky white exterior wrapper, which includes a layer of translucent fiber insulation. Like shoji screens, the fiberglass membrane diffuses daylight, allowing soft rays to bathe the interior. This luminous quality comes at the cost of views, but provides a good trade-off since the neighbor's home stands only a few feet away.

In most American cities, such a tiny strip of land would have had little value. But the words *lucky drops* are the English equivalent of the Japanese for "saving the best for last"—and, as the name of this house attests, even leftover bits can become catalysts for invention. ■



The taut fiberglass skin glows from within at night (previous page, right). Lucky Drops contrasts strikingly with its far more conventional neighbors (previous page, left). The tube of space narrows to only 3 feet across at back (far left). Inside, the house presents a single, continuous space (left).

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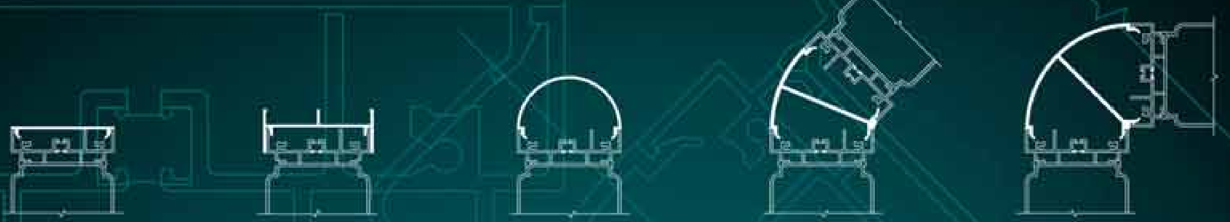

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90-degree corner caps were used to connect four acrylic block panels together to form decorative, lit towers. The panels were mounted to the base and top piece with flat caps.

Aluminum mulls were used to connect these flat panels and radius walls together. A flat cap and mounting channel were used to mount the units to the base and the walls. Flat caps were also used to connect the desktop to the top of the panels.

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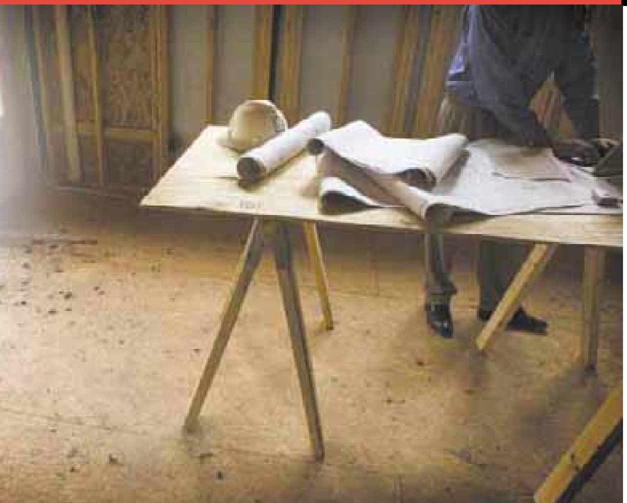

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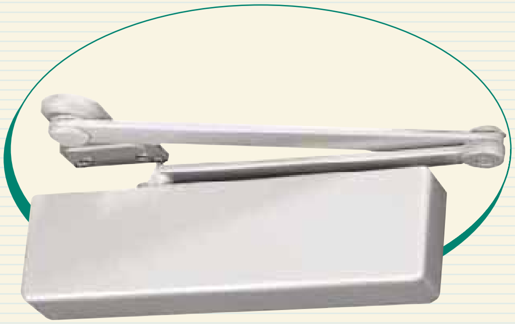

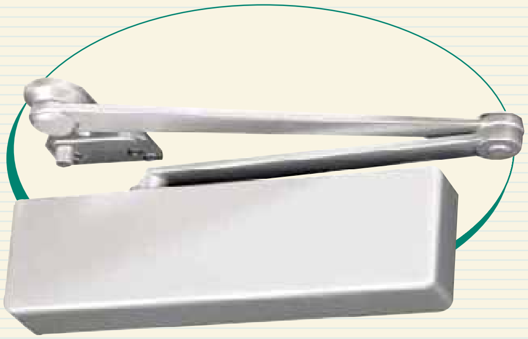

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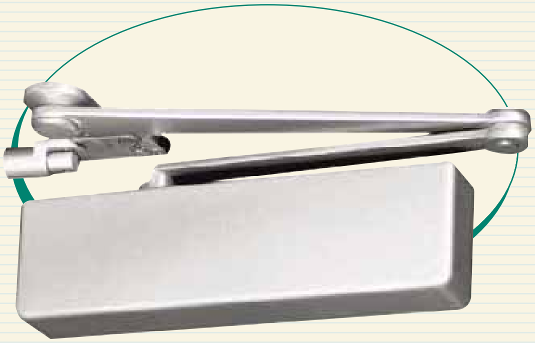

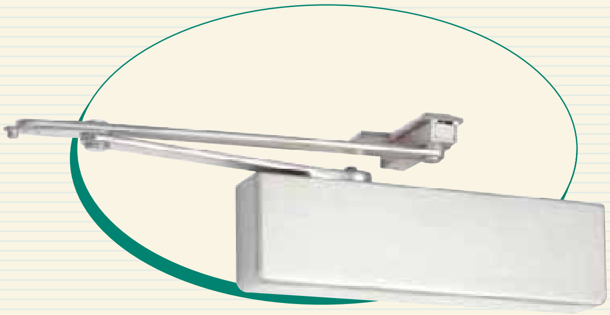

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Record Houses 2006

Cascading down a steep slope—with a rush of terraces, concrete volumes, and a pool of water that spouts over the edge—Casa Tóló could be nowhere else. Here, in Vila Real, Portugal, architect Álvaro Leite Siza Vieira has fit a house to the unique contours of its precipitous topography.

Throughout Record Houses 2006, each project reveals strong links to its particular place. In the eight featured dwellings, culled from four continents, the connection may be primarily through culture, climate, landscape—or a combination of influences.

At Javier Artadi's Las Arenas Beach House, on the starkly arid coast of Peru, pure, crisp, white concrete forms stand in the sharp sunlight—opening the architecture literally and figuratively to outdoor living in this warm climate. Meanwhile, Olson Sundberg Kundig Allen's Stilt Cabin, a treehouselike hideaway of raw steel and plywood, rises like a sapling—completely at home against Washington's Cascade Range.

In the countryside near Tokyo, Kengo Kuma's Lotus House, with its improbable checkerboard screen of thin travertine panels, captures the delicate floating quality of lotus flowers on a pond. This unusual house could exist only in Japan. Though Maya Lin's Box House, set in the Colorado Rockies, also has a sheer outer screen, it abstracts nature differently, echoing the dappled light that filters through surrounding aspens. At the same time, its windows frame a spiraling array of views out to the peaks.

Responding to an existing "village green" on the site of New England House, Office dA reinterprets—and inventively transcends—the local vernacular. In another farm-related setting, a vast stretch of dairyland in rural Wisconsin, Wendell Burnette's Field House looks as quiet and comfortable as the metal farm structures dotting this landscape. A modest and inobtrusive insertion, Burnette's elegantly simple, aluminum-clad box ultimately reveals a level of subtle refinement. And finally, Studio Blank's Xeros Residence, in Phoenix, addresses its desert climate with intentional ambiguities between indoors and out. Formally, the building's rusted "veil" has a strong Modernist character while also evoking the old farm equipment weathering along local roadsides.

The sense of place has a powerful presence in each of these houses—be it in Portugal or Peru, the Pacific Northwest or Japan, Colorado or New England, Wisconsin's dairy country or Arizona's desert. Through this rich and varied collection, we invite you to embark with us on a little world tour. ■

1. **Artadi Arquitectos**
2. **Olson Sundberg Kundig Allen**
3. **Kengo Kuma**
4. **Maya Lin Studio**
5. **Office dA**
6. **Wendell Burnette**
7. **Álvaro Leite Siza Vieira**
8. **Blank Studio**

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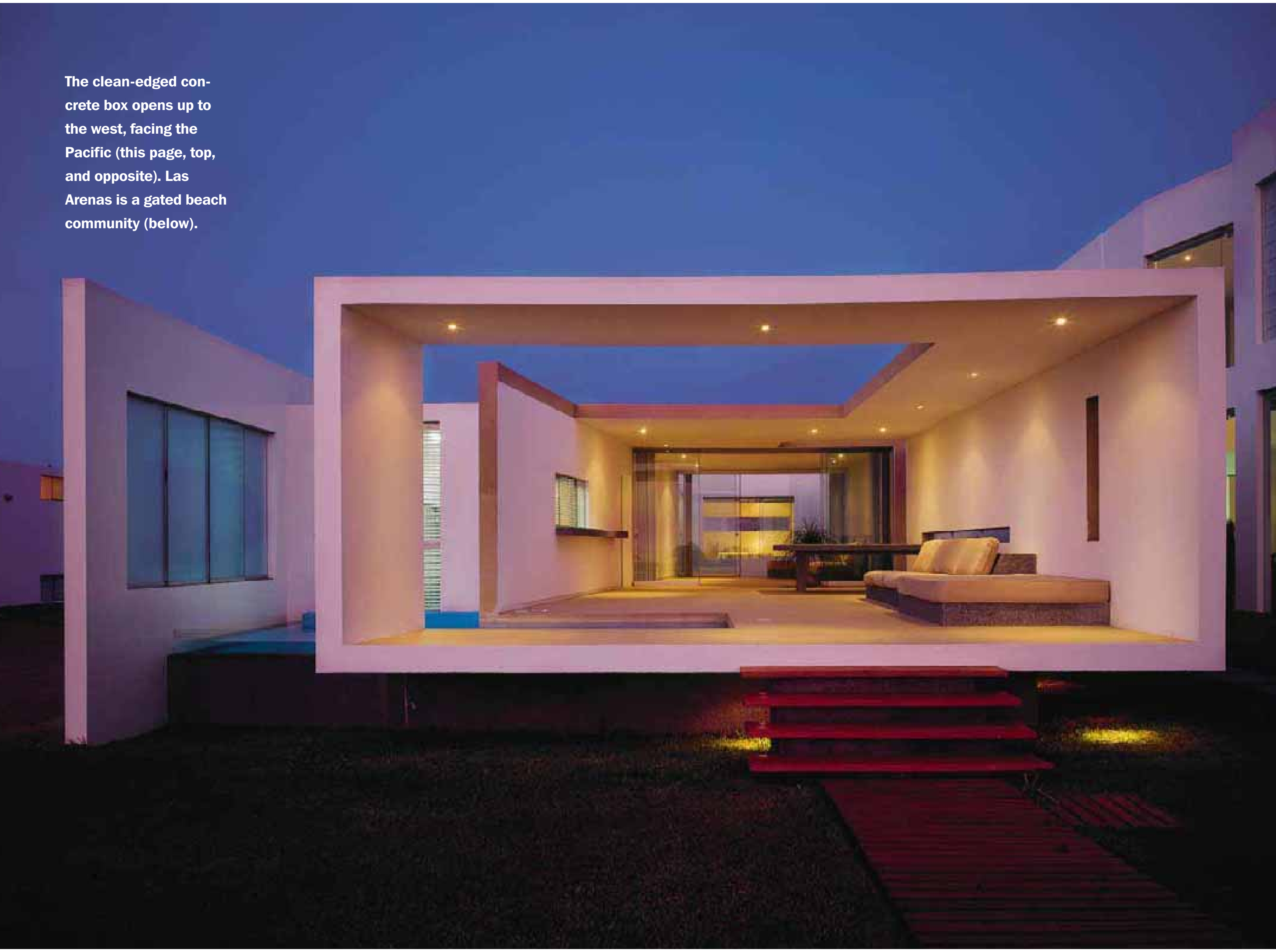
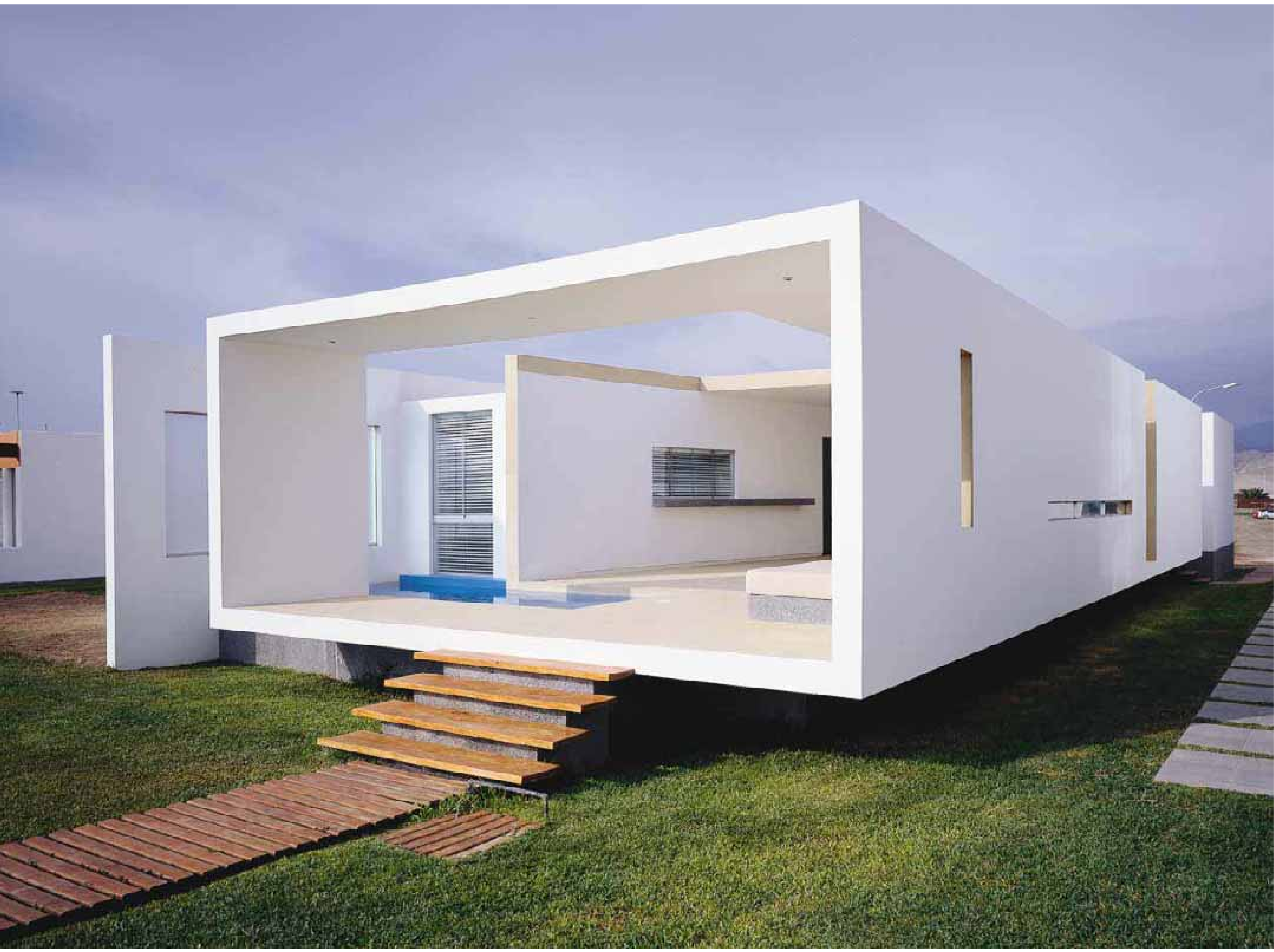


The clean-edged concrete box opens up to the west, facing the Pacific (this page, top, and opposite). Las Arenas is a gated beach community (below).

On the arid coast of Peru, Javier **Artadi** gives the Modernist white box a crisp new edge in LAS ARENAS BEACH HOUSE



PHOTOGRAPHY: © ALEXANDER KORNHUBER

By Raul A. Barreneche

Rain almost never falls on the Peruvian coast just south of Lima, the northernmost stretch of one of the driest spots on earth: the Atacama Desert. In this arid landscape, barren mountains and sandy cliffs hover above the Pacific. Beneath a vast, glaring sky, the startlingly empty, alien terrain—with not so much as a cactus on the ground—makes anything built here look like a brusque intrusion. Still, gated communities crowd this inhospitable coast, as *Limeños* buy up dusty plots to build weekend escapes at the beach. In one such development, Las Arenas, 60 miles south of the capital, architect Javier Artadi has created a house of pure, Minimal, almost simplistic forms—carved-out, white concrete boxes—that belie a complex attitude toward the setting.

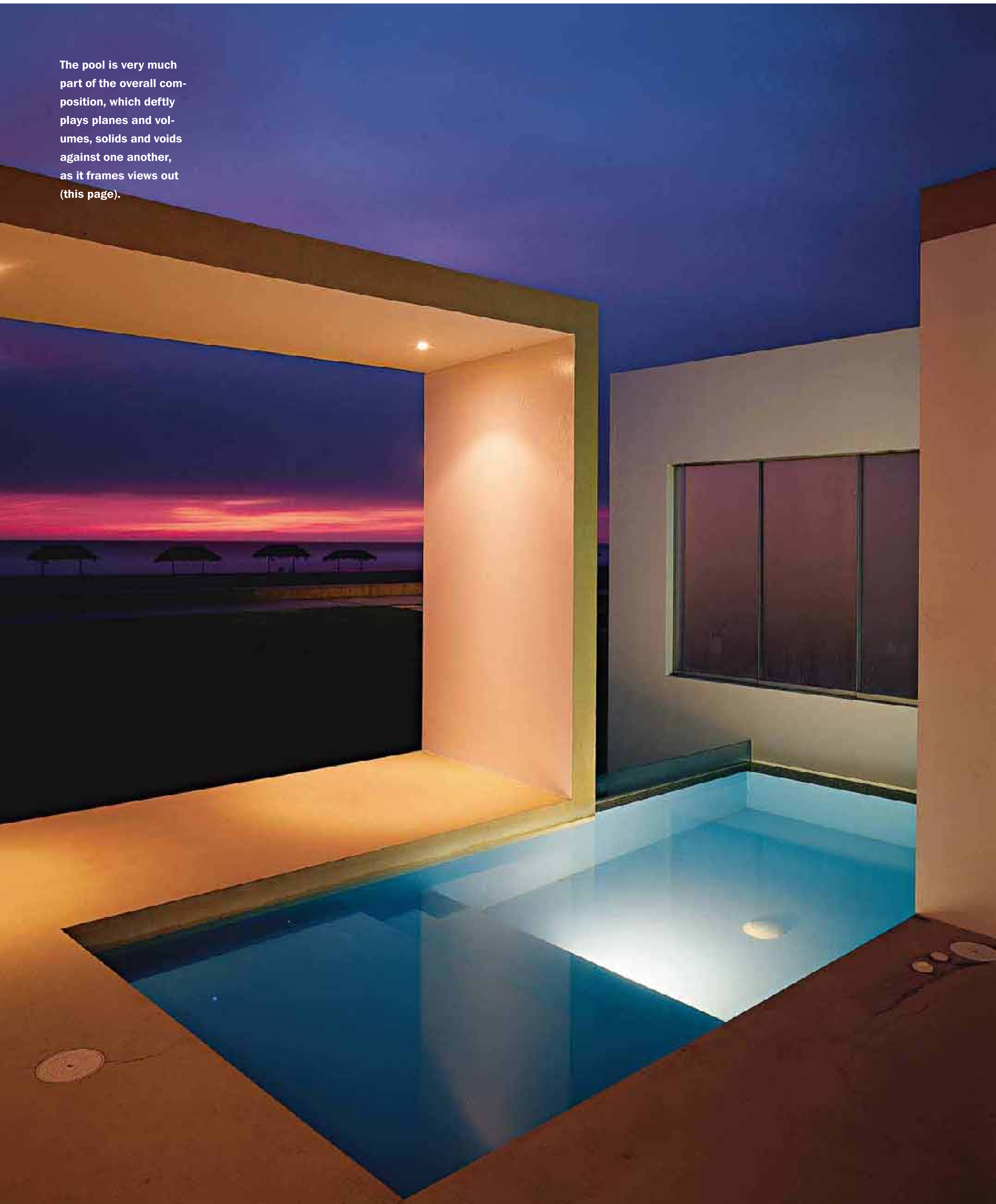
By cantilevering the white boxes over a dark gray terrazzo plinth, Artadi detaches the single-story house from the ground plane, letting the forms float visually. At the same time, he brings the beach inside metaphorically, with sand-colored concrete floors. "The idea was to reinvent the beach architectonically," suggests Artadi, an amateur surfer. Opening the house to outdoor living, he "folded" planes of concrete to demarcate roofs, walls, and floors, subtly jogging the whitewashed surfaces to define shady outdoor rooms, expose a partially cantilevered pool to the sun, and strategically frame views of the broad Pacific panorama. The house becomes an open-ended container that captures sky and horizon within a single volume.

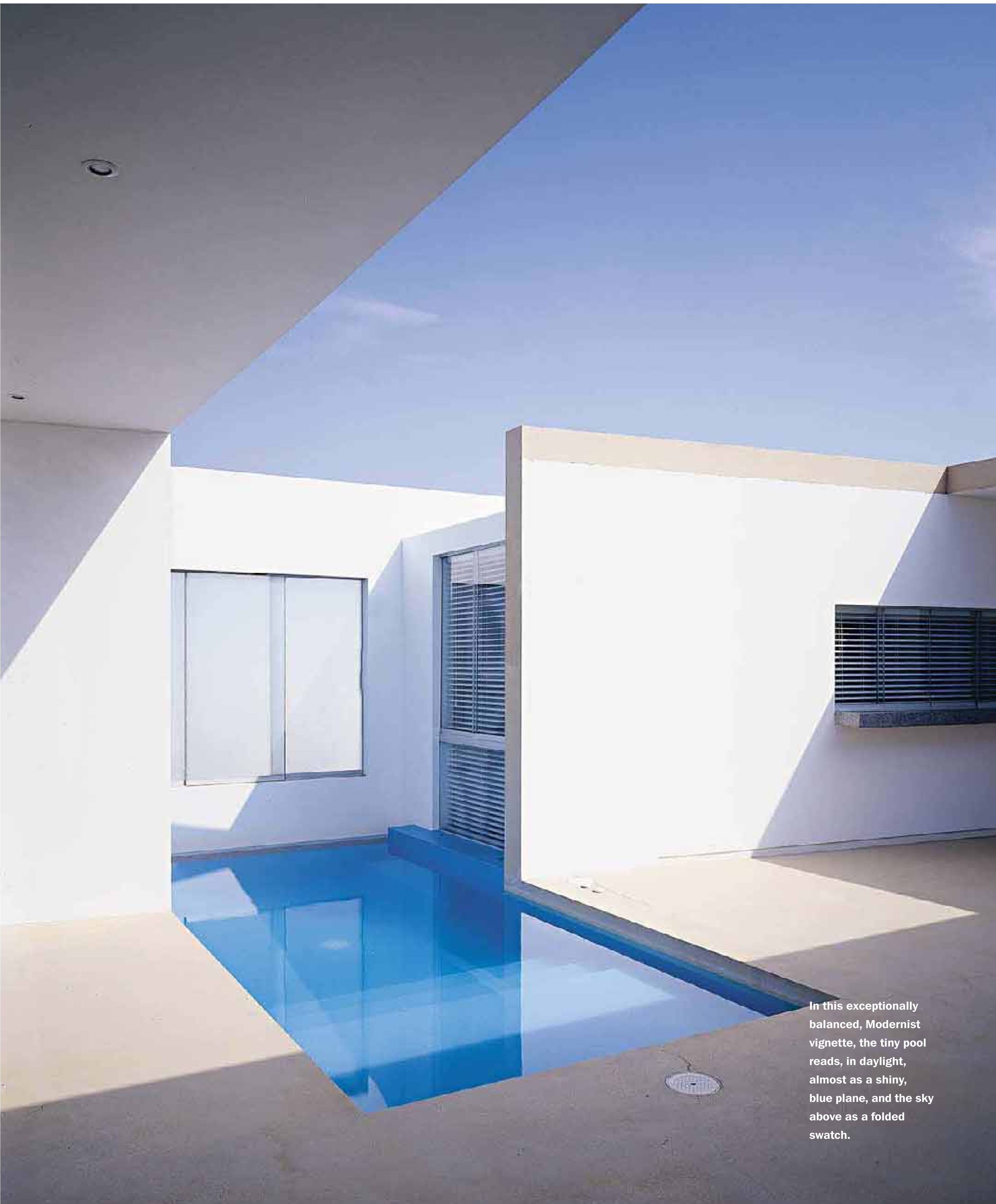
Artadi, a professor at the Peruvian University of Applied Sciences and a principal of the seven-person firm of Artadi Arquitectos, both in Lima, designed the 2,300-square-foot house for a city-dwelling couple and their three children. The property—a flat, 2,400-square-foot, artificially grassy parcel—came with design restrictions, stipulating that the facades could not be concrete, only of wood or other "soft" materials. That didn't stop the architect from breaking the rules. "Luckily, I knew the board members," jokes Artadi. In reality, Las Arenas's governing body—akin to a co-op board—granted a variance to his design, which, the architect suggests, "sets

Contributing editor Raul Barreneche's next book is Pacific Modern *(Rizzoli, 2006).*

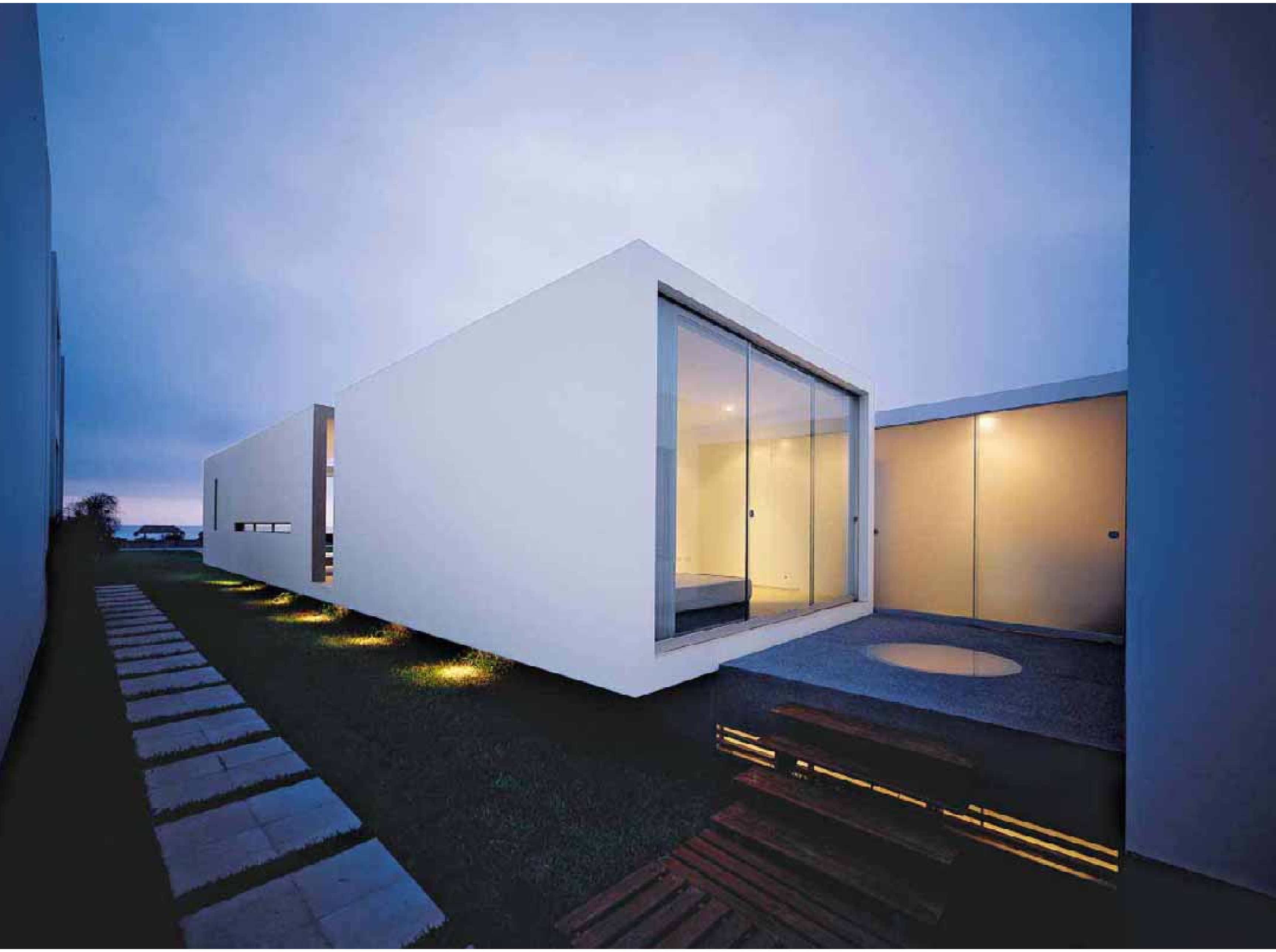
Project: *Las Arenas Beach House, Peru*
Architect: *Artadi Arquitectos—Javier Artadi, principal; Oscar Luyo, project manager; Ivan Navas*
Engineers: *Jorge Indacochea, Rigoberto Mayorga, Angel Dall'Orto*

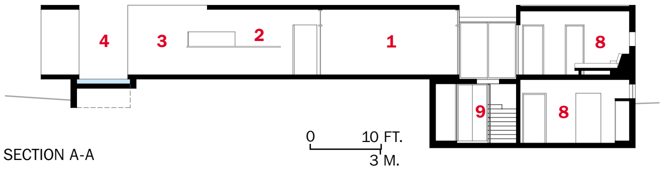
The pool is very much part of the overall composition, which deftly plays planes and volumes, solids and voids against one another, as it frames views out (this page).





In this exceptionally balanced, Modernist vignette, the tiny pool reads, in daylight, almost as a shiny, blue plane, and the sky above as a folded swatch.

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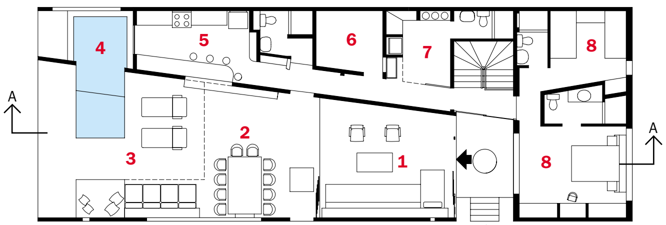
SECTION A-A

1. *Living*
2. *Dining*
3. *Terrace*
4. *Pool*
5. *Kitchen*
6. *Storage*
7. *Laundry*
8. *Bedroom*
9. *Den*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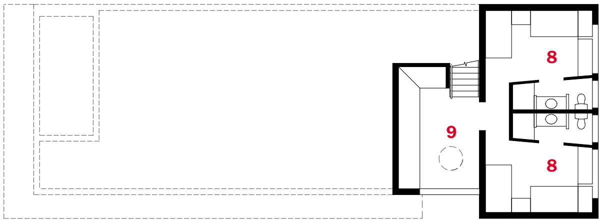
TERRACE LEVEL



UNDERGROUND LEVEL

The white volumes, cantilevered over a dark plinth, appear to float (opposite, top). The entry patio cleaves the box into two (opposite, bottom). Facing west, the terrace frames sunset vistas (this page).

a precedent for other possibilities for the community."

The directors may have been swayed by the house's visual lightness, especially the svelte concrete frame that defines the oceanfront facade. This form, a clean-edged rectangular tube, wraps a combined pool deck and outdoor living/dining area. Inside, the slightly more formal living room has sliding glass doors that can screen off the space or open it to the spatial flow. Artadi allotted half of the ground floor to the communal zone, but limited the size of sleeping areas. "At the beach," he points out, "you tend to wake up with the sun and go to bed late after socializing, so you spend little time in the bedroom." To encourage informal lounging and dining throughout the day, he built concrete benches along the living/dining area's south wall, with oversize cushions and a terrazzo-covered concrete dining table.

A skewed corridor separates the communal areas from the kitchen and servants' quarters, which extend along the house's north flank. The skew creates a forced perspective, amplifying the sense of space and heightening views out. The master suite and guest bedroom anchor the house's east end, where a partially excavated basement adds two children's bedrooms and a den. Sunlight reaches the lower level through a large circular disk or skylight, set into the entry patio, which Artadi notched into the house's south side, cleaving the master bedroom from the living area.

Despite its formal complexity, the house demonstrates considerable economic restraint. Construction came to just $60,000, thanks to low-cost, high-quality workmanship with a straightforward palette of poured-in-place concrete, terrazzo, spray-on concrete floors, and little else.

In a developing country like Peru, such a commission takes on significance beyond the notion of house as design laboratory. "Here, there's still a sense that we can build the future through modern architecture," Artadi says. The power of this little building transcends the optimism of aggressive Modernism in arid Third World environs. Formally, the design's quiet sophistication and finesse go beyond the modest construction. Playing with the white box, Modernism's sacrosanct archetype, Artadi subtly folds and cuts into the volume, at times emphasizing its planar quality, and at others its solid geometry. In places, a simple edge and bent plane deftly imply a larger volume. The eloquent language of solid and void, mass and space speaks to a thoughtful Modernism—at home anywhere in the world. ■

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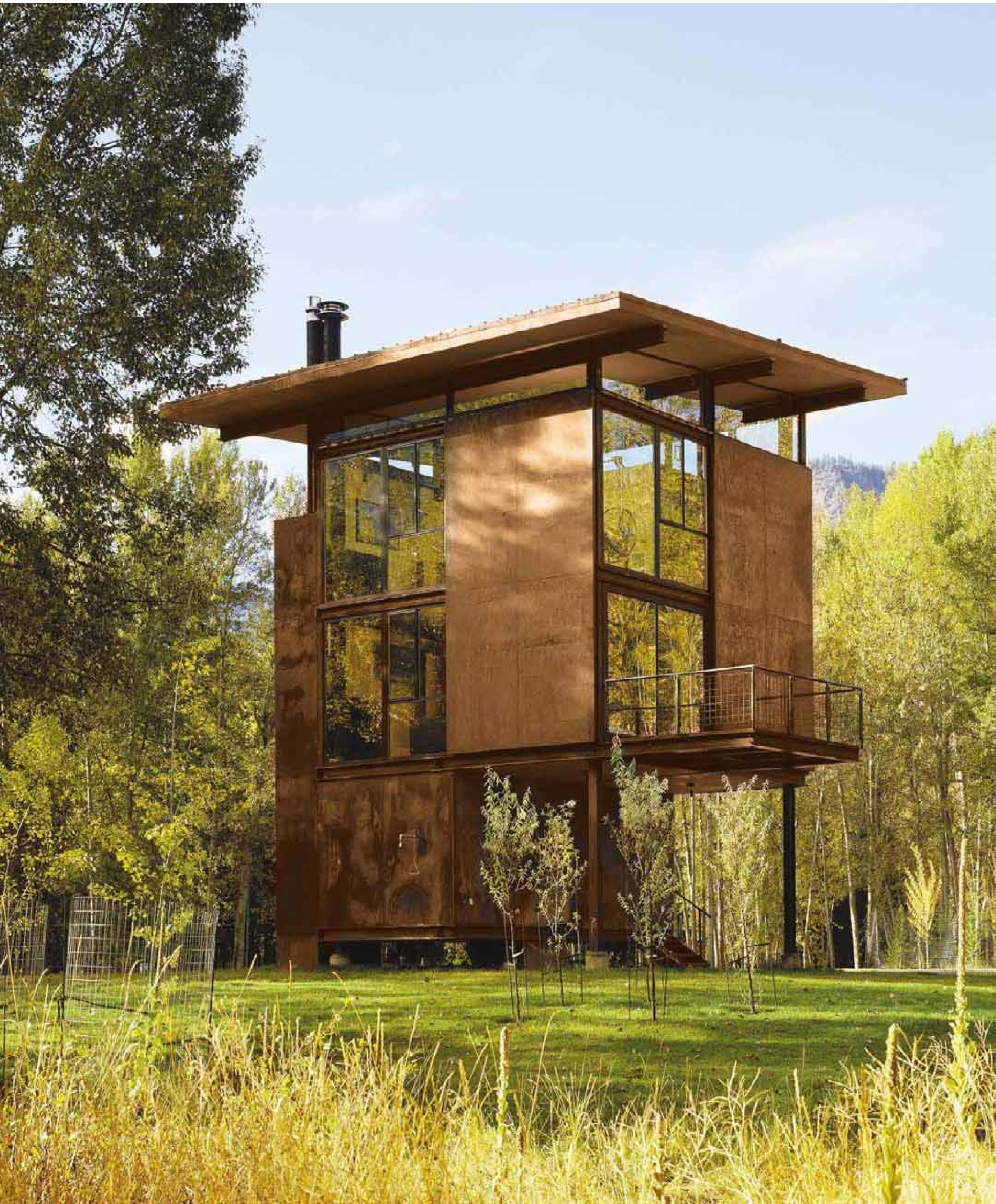
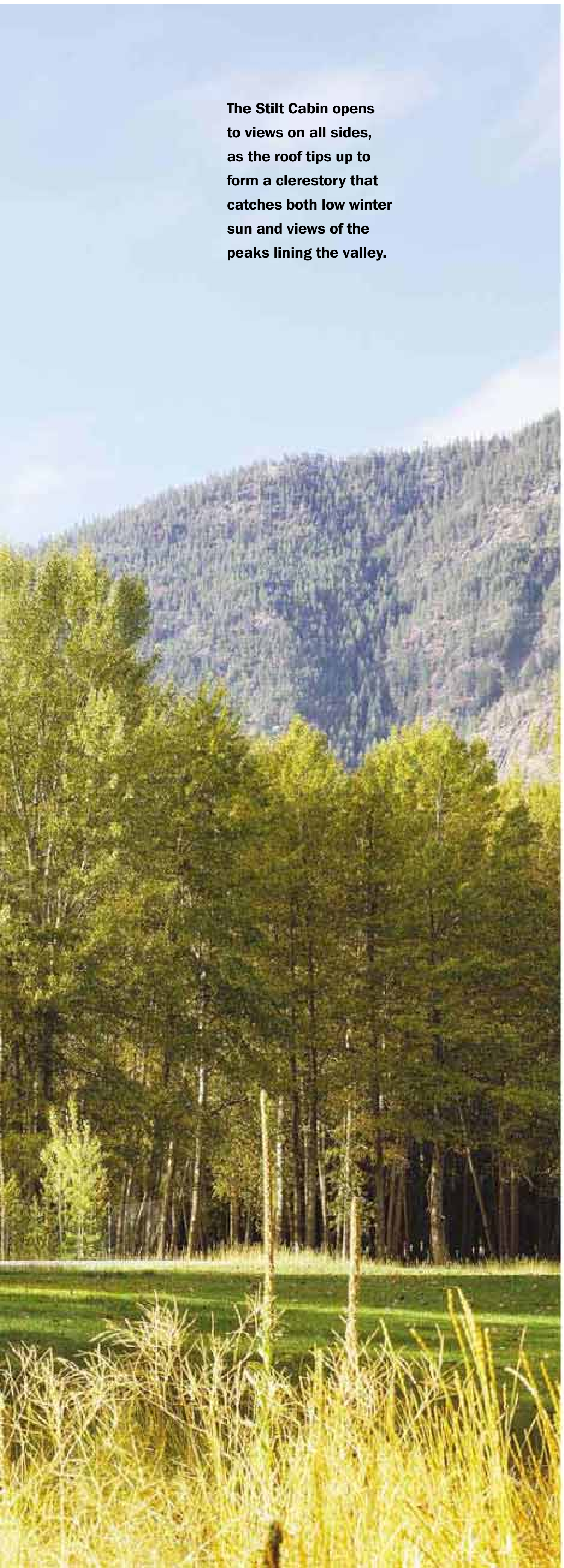




The Stilt Cabin opens to views on all sides, as the roof tips up to form a clerestory that catches both low winter sun and views of the peaks lining the valley.

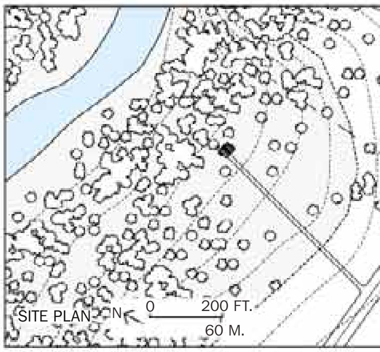
PHOTOGRAPHY: © BENJAMIN BENSCHNEIDER, EXCEPT AS NOTED

In Washington State, Olson Sundberg Kundig Allen sets its tiny STILT CABIN amid the Methow Valley's four-season splendor

James S. Russell, AIA

In the Methow Valley, which fissures deeply into the eastern slopes of Washington State's Cascade Mountains, a couple of weather-beaten utility buildings, a barn—steep-roofed to shed snow—and a plain farmhouse mark the 50-acre setting for Stilt Cabin. From the North Cascades Highway, the drive winds through a layer of white-skinned aspens, then a dark thicket of pine and fir, followed by a veil of scaly cottonwoods covered with wire-brush branches. It finally opens to a frontal view of the two-story pavilion, poised on thin columns, like a gangly wading bird, alert to any disturbance.

Stilt Cabin was designed to survey its surroundings. On its two habitable levels, half of each elevation is glass; unpainted steel clads the rest. The ground floor encloses only storage, a laundry room, and mechanicals because the house rises on a 50-year floodplain. A welded and bolted frame of wide-flange sections holds the whole structure together. Through the glass, the diagonal of the stair is visible, along with the planes of bleached plywood that enclose the kitchen on the uppermost level, and sleeping and bath areas below it.

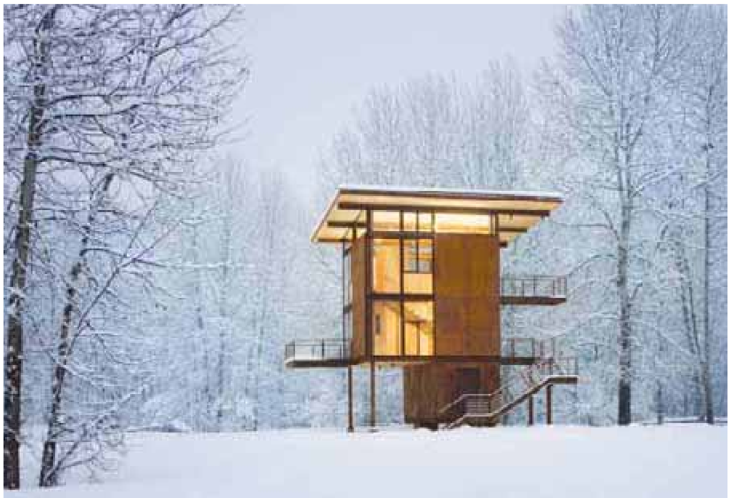


Together, the two upper levels enclose a mere 700 square feet of livable space. It's a getaway that perfectly suits Michal Friedrich, a Seattle dentist. "In Poland, where I grew up, I lived with my two sisters and my parents in a 60-square-meter [645-square-foot] apartment," he explains. "So a small house is okay with me." He also speaks of his home country's tradition of dachas—summer cottages in the woods, typically half the size of Stilt Cabin—that are shared by entire families. In such close quarters, "you'd better like each other," he cautions.

"I wanted something tiny, only a bedroom or two, a bath, a small toilet room, and a real fireplace, so I can hear the wood crackle," says Friedrich. Before commissioning the cabin, he was drawn to Chicken Point, a house Tom Kundig, FAIA, of Seattle-based Olson Sundberg Kundig Allen,

Project: *Stilt Cabin, Mazama, Washington*
Architect: *Olson Sundberg Kundig Allen—Tom Kundig, FAIA, Ellen Cecil, Debbie Kennedy*
Engineers: *Monte Clark Engineering (structural); Turner Exhibits (shutter engineer)*
General contractor: *Tim Tanner*

Planes of glass open on all four sides to views (plans, below), capturing the ever-varying light, as well as the seasonal changes (right). Operable steel-plate panels slide into place to close up the cabin entirely (bottom right).



had designed. There, a huge, upward-pivoting, glass-and-metal garage-style door brings a serene water view virtually inside the living room.

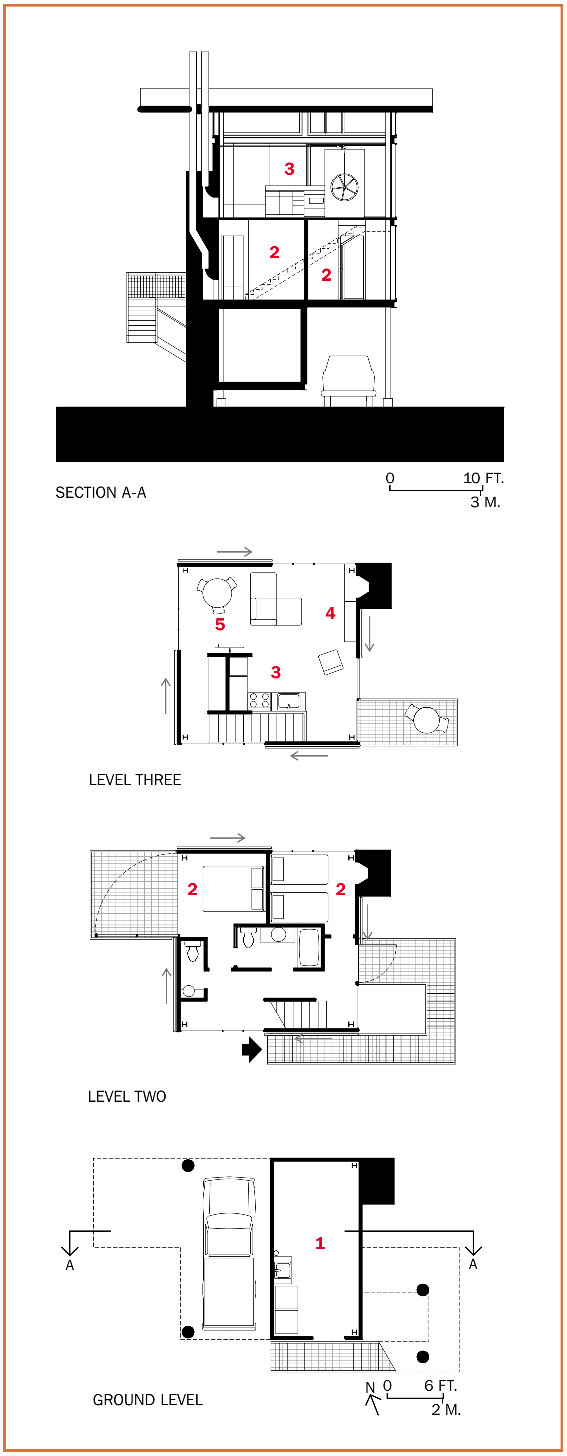
In contrast to the claustrophobic lushness west of the mountains, the high desert valley permits "a little box of a house in a big landscape," says Kundig, who spent much of his childhood in similarly dry, pine-dotted Spokane. Friedrich and Kundig paced the property, deciding to tuck the house at the downriver edge of the acreage, amid islands of cottonwood trees that appear to scud across a meadow.

Catching views of peaks and the low winter sun, Stilt Cabin's flat roof tips up to form a clerestory. A balcony projecting westward from the bedroom aims at Goat Peak, at the head of the valley. Within earshot, the river runs by, a short distance north of the cabin.

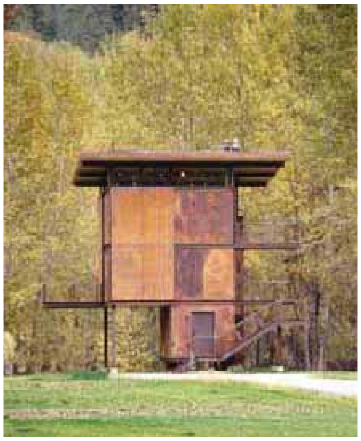
"In European houses, shutters are common," Friedrich says. He wanted Kundig to design something similar, so that "I could leave the house and not worry about it." He had been impressed by the elaborate hand-operated device that Kundig had designed to control the glass door at Chicken Point. For Stilt Cabin, the architect created massive shoji screens of heavy-gauge steel panels, operated all at once through a gear-and-cable apparatus. Fully closed, the steel surfaces, gently pre-rusted by a salt spray, armor the house against weather and wildfire. (In the dry valley air, the panels won't rust out.)

The tight plan squeezes the two bedrooms to the size of monastic cells, with tiny wardrobes instead of closets—which suits Friedrich fine. "To him, the house is a launching pad for outdoor activities," Kundig explains. A skier, hiker, runner, and practitioner of martial arts, Friedrich has even laid out a soccer field on a former horse pasture. Near the river, he has installed a hot tub with its own outdoor shower, and is converting the old farmhouse to lodge his steady stream of guests.

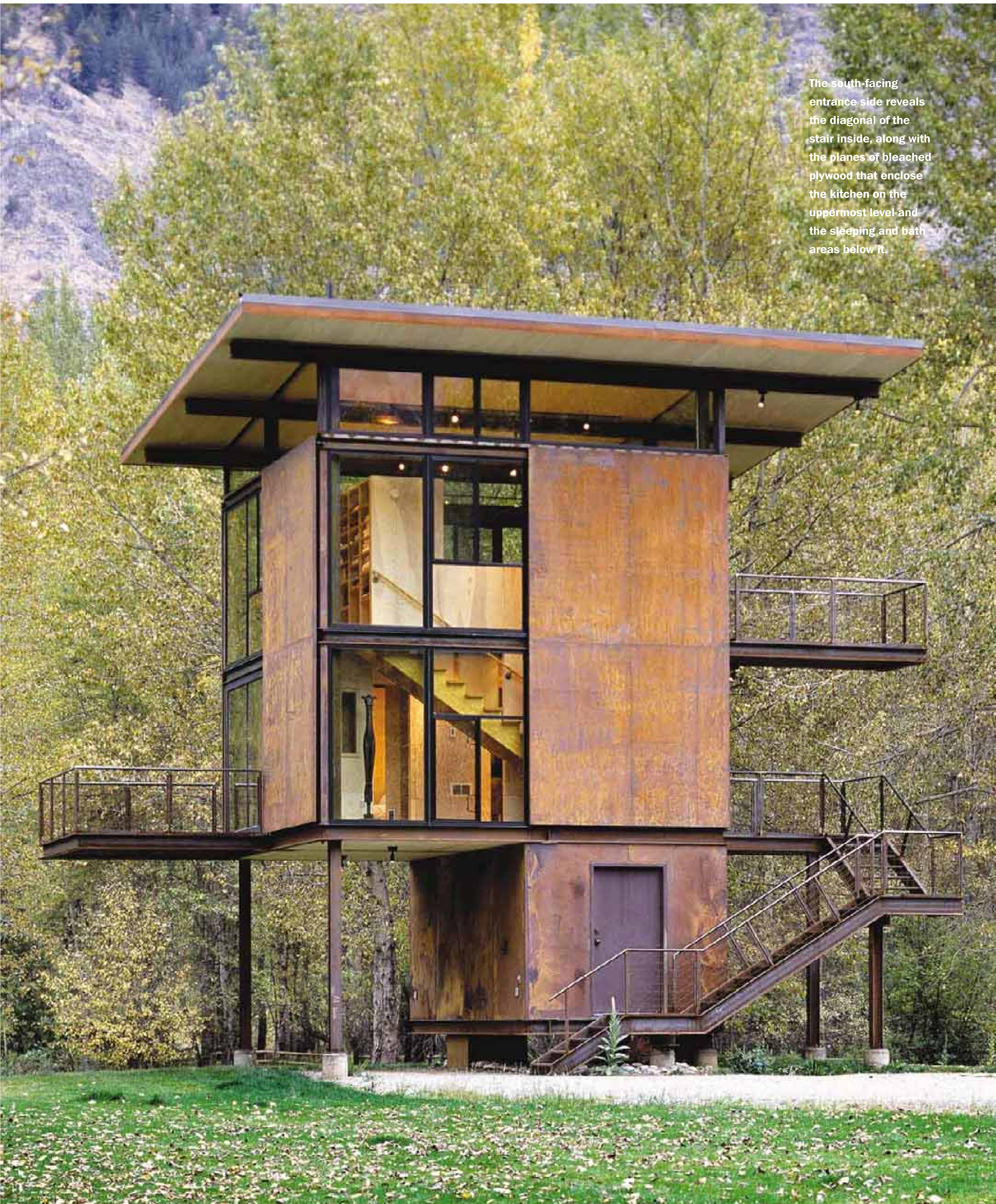
"I edited [the cabin] down to the basics, wood and metal," says Kundig, summing up his design approach. "The landscape seen from



1. *Storage, laundry, and mechanicals*
2. *Bedroom*
3. *Kitchen*
4. *Living*
5. *Dining*

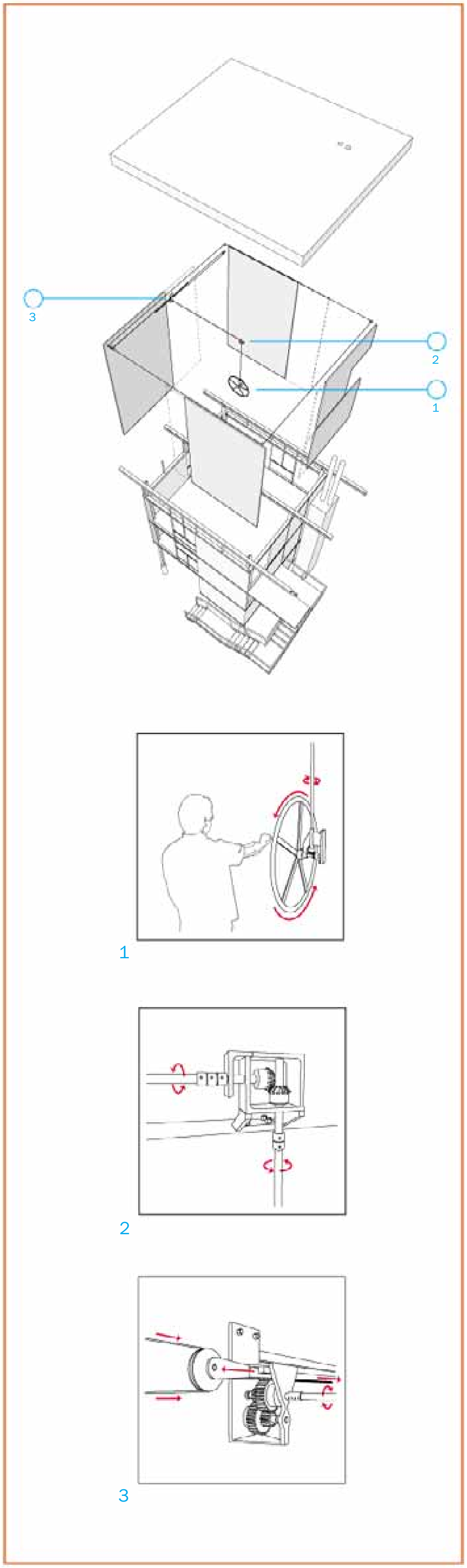


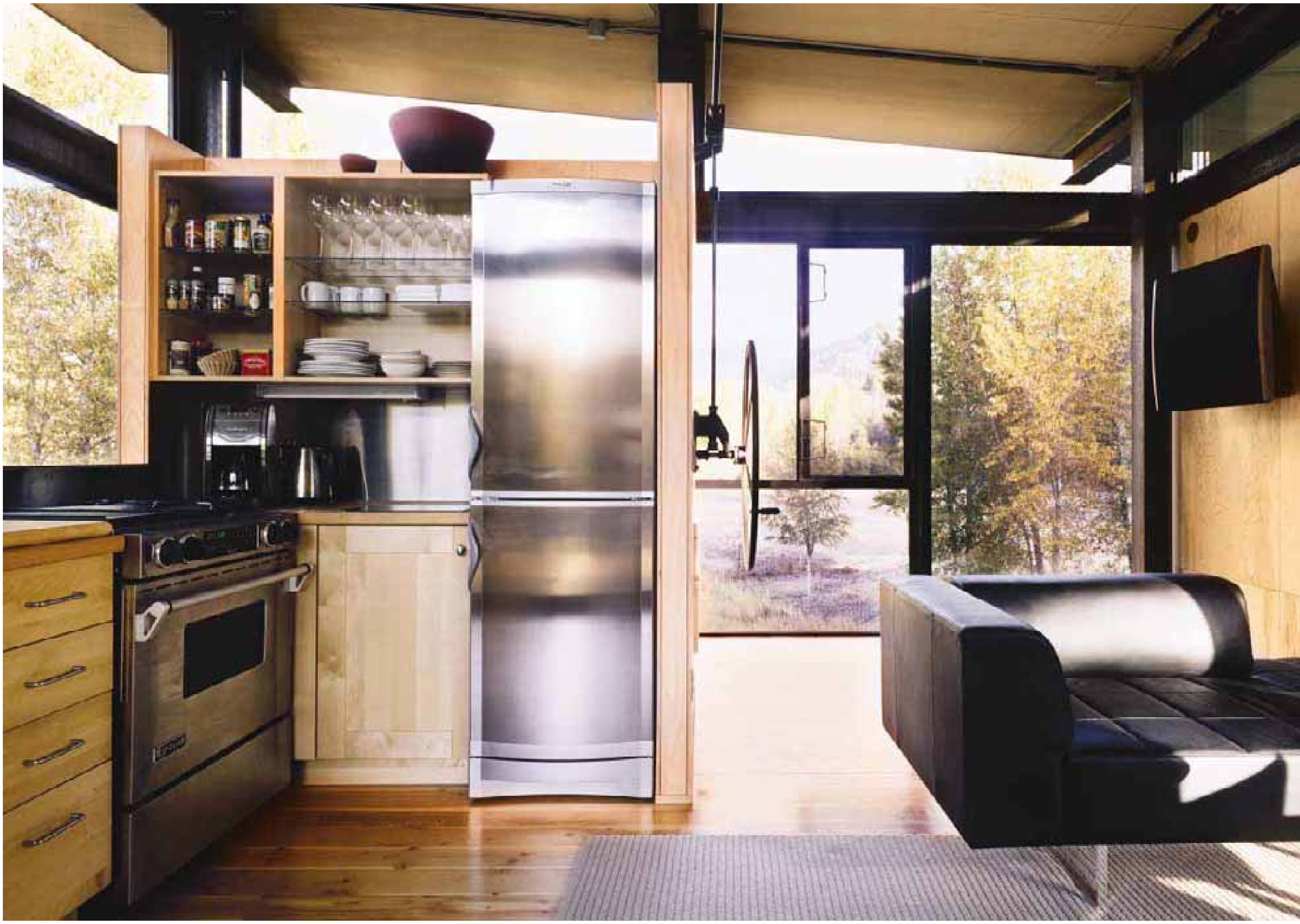
PHOTOGRAPHY: © TIM BIES (TOP)



The south-facing entrance side reveals the diagonal of the stair inside, along with the planes of bleached plywood that enclose the kitchen on the uppermost level and the sleeping and bath areas below it.

The welded and bolted unpainted-steel frame remains visible throughout the structure, from the middle-level entrance (left) to the top-level kitchen/living area (bottom left and opposite, top). The entrance door and a massive pivoting door at the master bedroom (opposite, bottom) were fabricated from steel. A large wheel operates all four, shojilike protective panels at once through a gear-and-cable apparatus (right).





PHOTOGRAPHY: © UNDINE PROHL (BOTTOM AND OPPOSITE TWO)

within is more important than how the building is seen from the landscape," he adds. The cabin's modesty provides a tonic antidote to the growing size and self-conscious woodsiness of the log-cabin mansions going up in the woods all around.

Perched high, the small house offers vantage points that make the visitor perpetually aware of the surroundings. On a recent late-winter evening, a light snowfall ended as clouds cleared away, revealing the setting sun blushing the nearby peaks. The next morning, a cloudless dawn lit snow-mantled panoramas in every direction. Slices of sunlight moving through the kitchen and living room tracked the hours of the day. Each spring, the cottonwoods leaf out in green flip-sided with silver. In summer, the deep blue of the river cuts through the meadows of sagebrush and pale straw. Fall brings a wash of gold. "Seeing the house all year round in different light," Friedrich offers, "I love it more and more." ■

Sources

Metal roofing: *AEP Span*

Steel framing: *Farwest Ironwork*

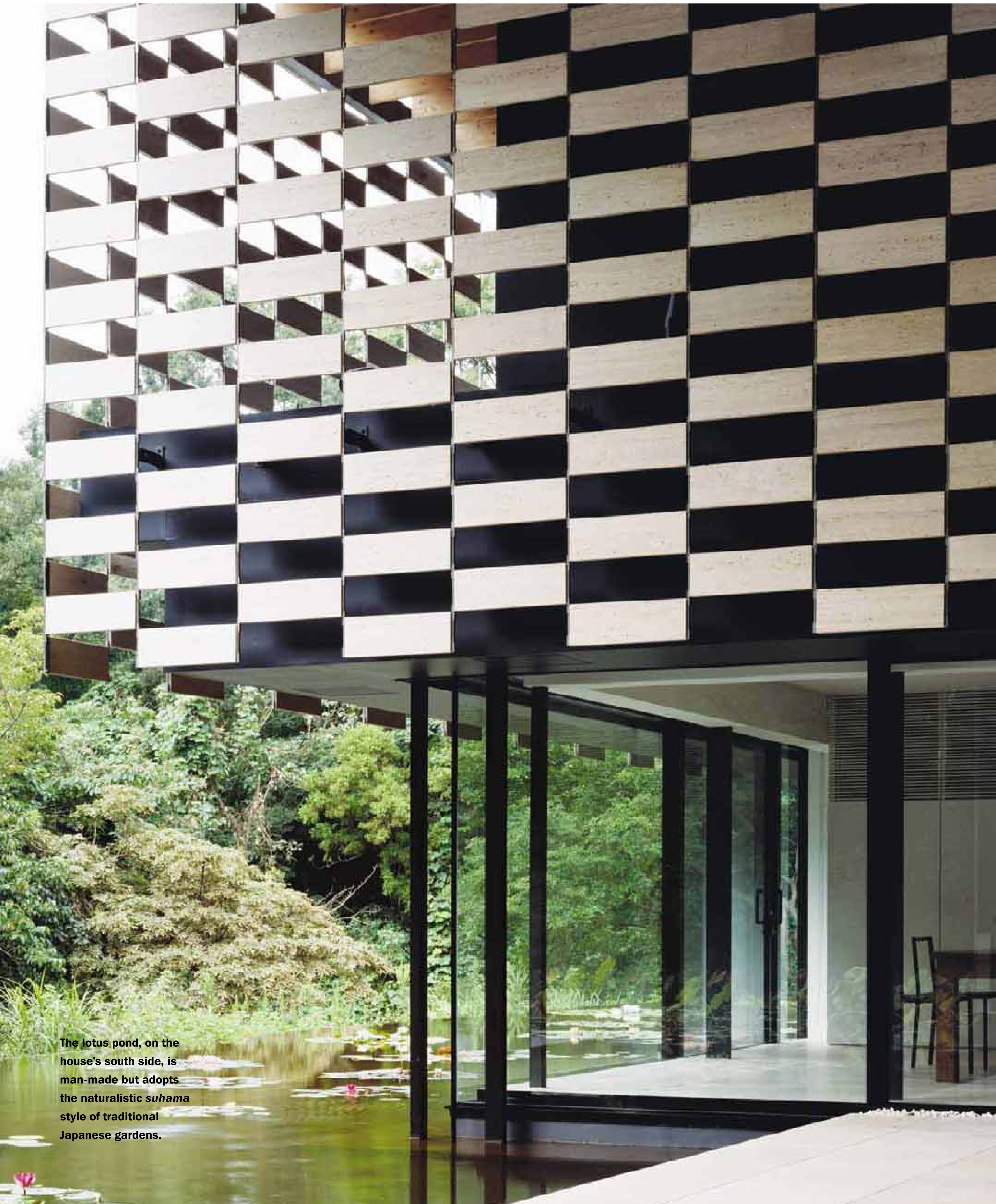
Aluminum windows: *Milgard*

Doors: *CECO (steel entrance door); custom by contractor (plywood); Fleetwood (sliding glass)*

Interior plywood: *Weyerhaeuser*

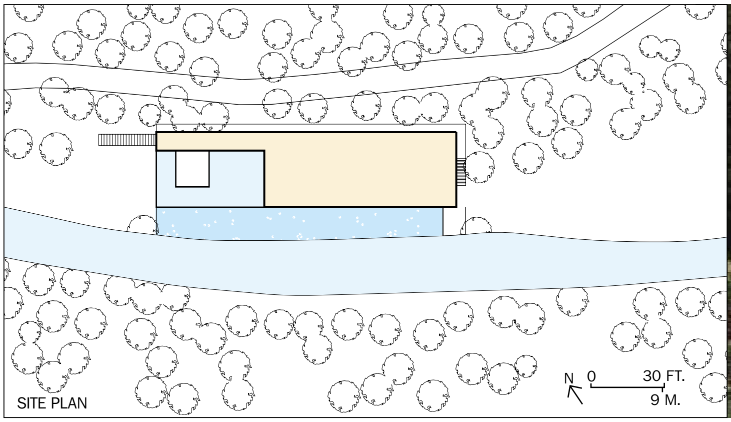
Furnishings: *Cassina; Leaf Chair; Knoll; Chista; Poltrona*

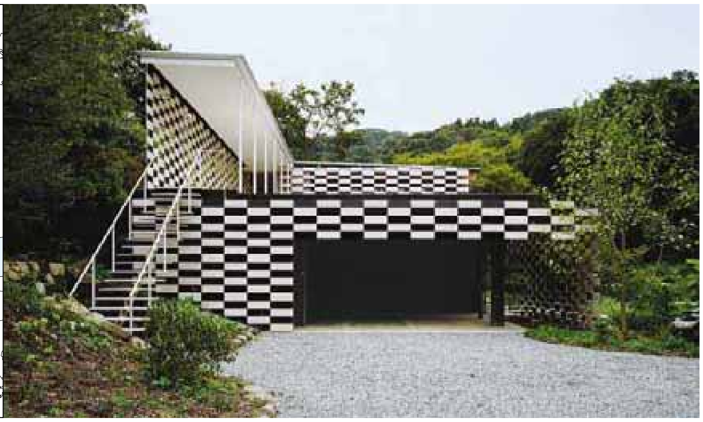
For more information on this project, go to Projects at **www.archrecord.com**.



The lotus pond, on the house's south side, is man-made but adopts the naturalistic *suhama* style of traditional Japanese gardens.

Kengo **Kuma** turns stone into gossamer, wrapping the **LOTUS HOUSE**, near Tokyo, in a checkerboard of wafer-thin travertine





The stair behind the garage (below right) leads up to a deck. Kuma juxtaposes three levels of water: the reflecting pool, on the second floor deck; a lotus pond, at grade; and the existing river, with its banks a precipitous 10 feet below the house.

By Naomi Pollock, AIA

A checkerboard wrapper of thin travertine panels alternating with rectangular openings forms a delicate screen that partially veils Lotus House, a 5,737-square-foot weekend home, some 40 miles west of Tokyo. With this unusual exterior wall, architect Kengo Kuma has explored what he calls “nonmonumental and transparent ways of building with stone.” He says he also intended the wafer-thin checkerboard as a challenge to the traditional Western precept that stone should play a load-bearing role (or, at least, appear weighty). Even before designing Lotus House, Kuma had a well-honed reputation for working closely with artisans and contractors to investigate the unexpected possibilities of natural and man-made materials. And while this project hardly represents his first experiment with stone, it is by far his most daring.

Here, the client’s love of travertine, imported from Italy, prompted the initial material choice. Kuma also took inspiration from the Japanese tendency to blur boundaries between inside and out, but he soon inverted expectation by proposing “an architecture of holes.” In fact, he envisioned the entire house—beyond the patterned, semipermeable wall—as a composition of solids and voids.

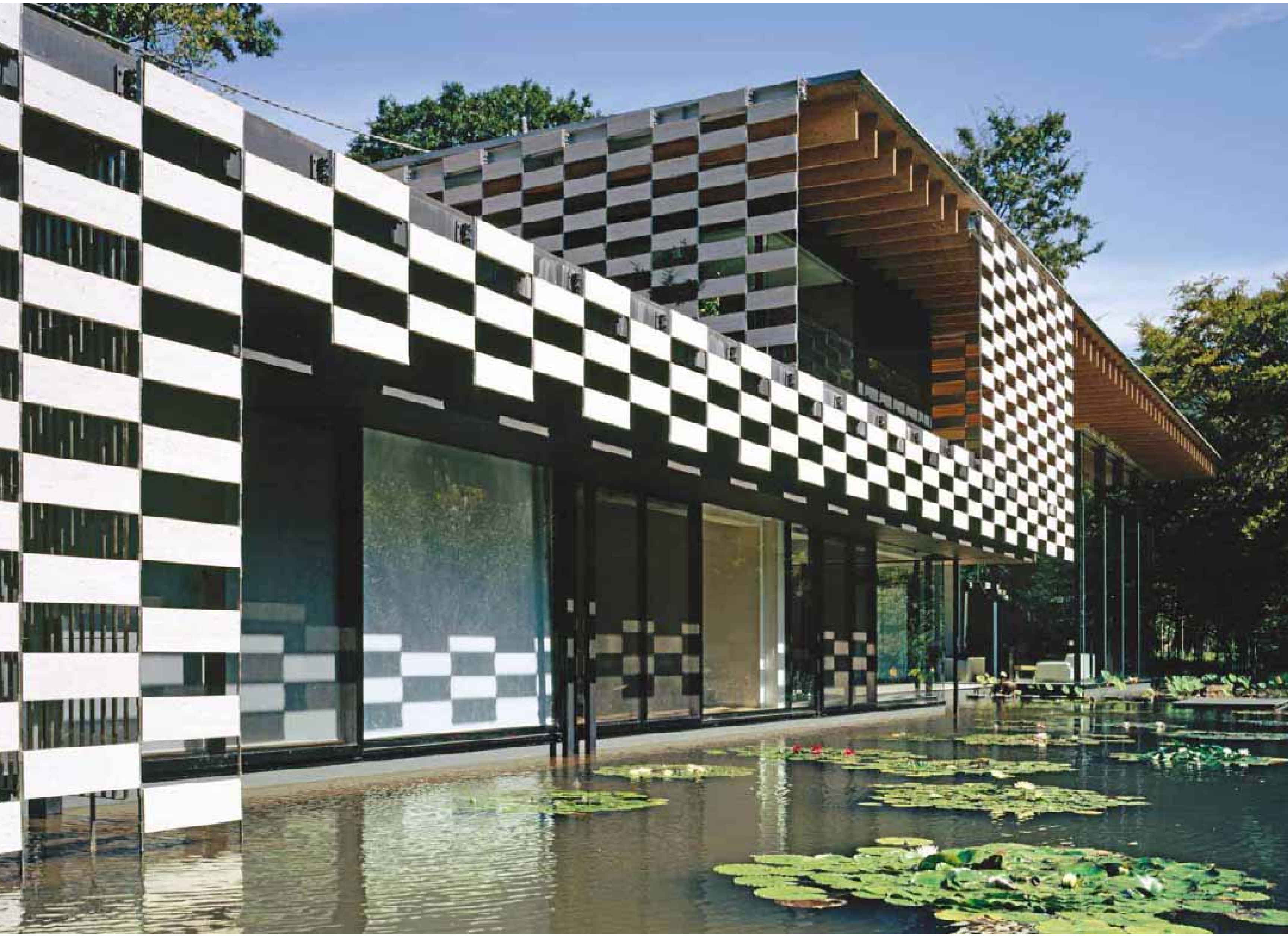
While Japanese regulations “count any space under a roof as interior [whether fully enclosed or not], people don’t typically use these semi-open areas much,” observes the architect. But for Kuma, such voids are “one of the best parts of traditional Japanese architecture,” prompting him to weave them into his work and exploit their potential whenever possible.

At Lotus House, he did so with a vast terrace inserted between the linear structure’s two main volumes. A wood-beamed roof, soaring 20 feet above the ground, crowns this outdoor room. One flanking volume contains the garage, kitchen, and two bedrooms, and above them, a reflecting pool, sauna, steam room, and suite of indoor and outdoor tubs. The other block houses a double-height, glass-enclosed living room with

RECORD’s Tokyo-based correspondent Naomi Pollock is the author of Modern Japanese House *(Phaidon, 2005).*

Project: *Lotus House, near Tokyo*
Architect: *Kengo Kuma and Associates—Kengo Kuma, principal; Yuki Ikeguchi, project architect*
Engineers: *OAK Structural Design Office; P.T. Morimura & Associates*
Landscape: *Takashi Shirai and Associates*

PHOTOGRAPHY: © DAICI ANO, EXCEPT AS NOTED



an alcove for an 8th-century statue of Buddha, behind a sliding wall. The living area spills onto the court—a perfect party space—which, in turn, opens dramatically onto a man-made pond, where lotuses bloom a few months of the year. Beyond this is an unspoiled forest.

Sited on the client's 8-acre parcel of undeveloped land—a rarity so near to Tokyo—Lotus House stands in a tree-studded, secluded valley with a small river running through it. Because of the hilly terrain, the logical spot for the house was near the river, where the client, a businessman with a keen interest in traditional Japanese art and religion, had already planted a collection of buildings: a 30-year-old wood teahouse by architect Togo Murano, a 19th-century wood farmhouse, and an early-20th-century stucco storehouse. (Elsewhere on the grounds, the owner had rebuilt a timber Buddhist temple for private meditation; a wooden Balinese sleeping cottage; and a massive, thatch-roofed Edo Period gate, relocated from a nearby town and now marking one of the property's two entrances.)

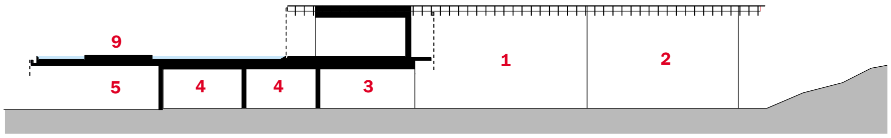
"SOMETIMES CLIENTS GIVE ME THE CHANCE TO REINVENT MYSELF," SAYS KUMA OF THE LOTUS HOUSE DESIGN.

For Kuma, the major challenge was how to relate his design not to the existing buildings (which are not even visible from Lotus House), but to the river, with its banks a precipitous 10 feet below the house. In earlier works, the architect had incorporated ponds, pools, and even the Pacific Ocean. Here, he responded to the site by juxtaposing water with water. His elongated lotus pond parallels the river while directly abutting the building, conceptually bridging the gap between the natural and the man-made. Whereas the river remains almost invisible from inside the house, the lotus pond provides the visual backdrop for every room.

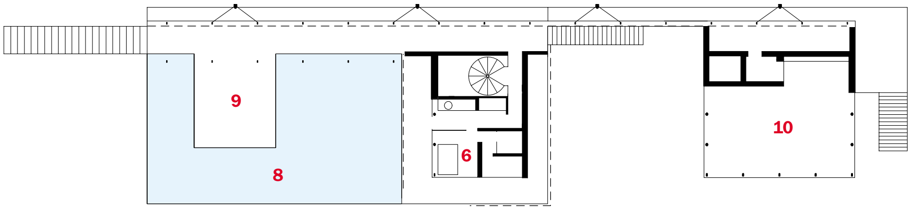
The man-made pond, with loosely defined edges and only a thin membrane separating it from the soil, adopts the naturalistic *suhama* style, found in traditional gardens throughout Japan. By contrast, the house's upper-level reflecting pool, lined in granite with mitred corners and crisp edges, is far more akin to Kuma's previous work. The subtle lotus pond marks a new direction for him, spurred by the owner's preference for water that is "not too controlled," says the architect, joking that "sometimes clients give me the chance to reinvent myself."

In other ways, Kuma's earlier projects referenced Japan's architectural history. And like traditional Japanese villas, Lotus House has neither a dominant facade nor a direct relationship to the street. Though the structure stands near the property's edge—within the sight lines of homes along a narrow public road, just up the slope—the property's two gated entrances

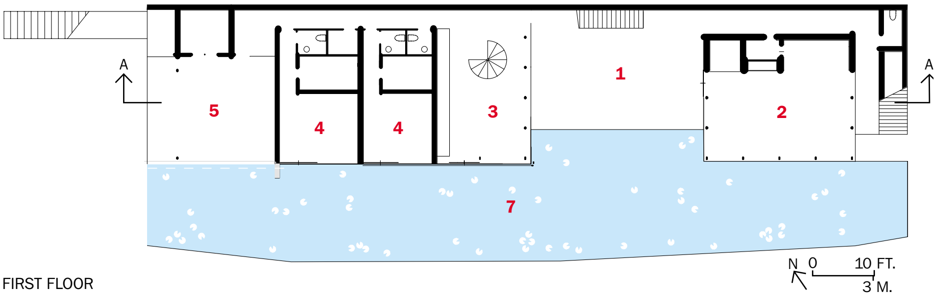
1. *Courtyard*
2. *Living*
3. *Kitchen/dining*
4. *Bedroom*
5. *Garage*
6. *Soaking tub*
7. *Lotus pond*
8. *Reflecting pool*
9. *Deck*
10. *Open to below*



SECTION A-A

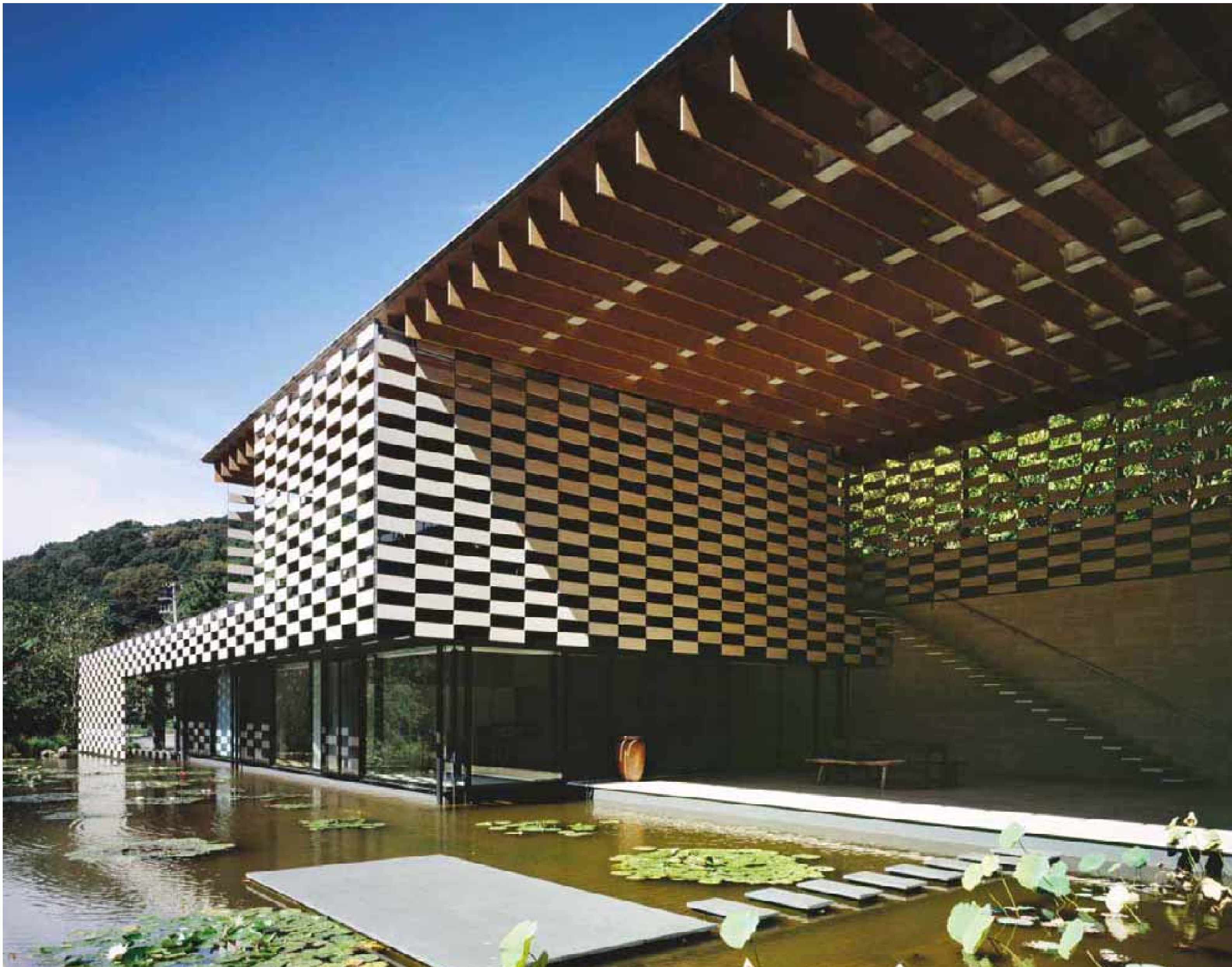


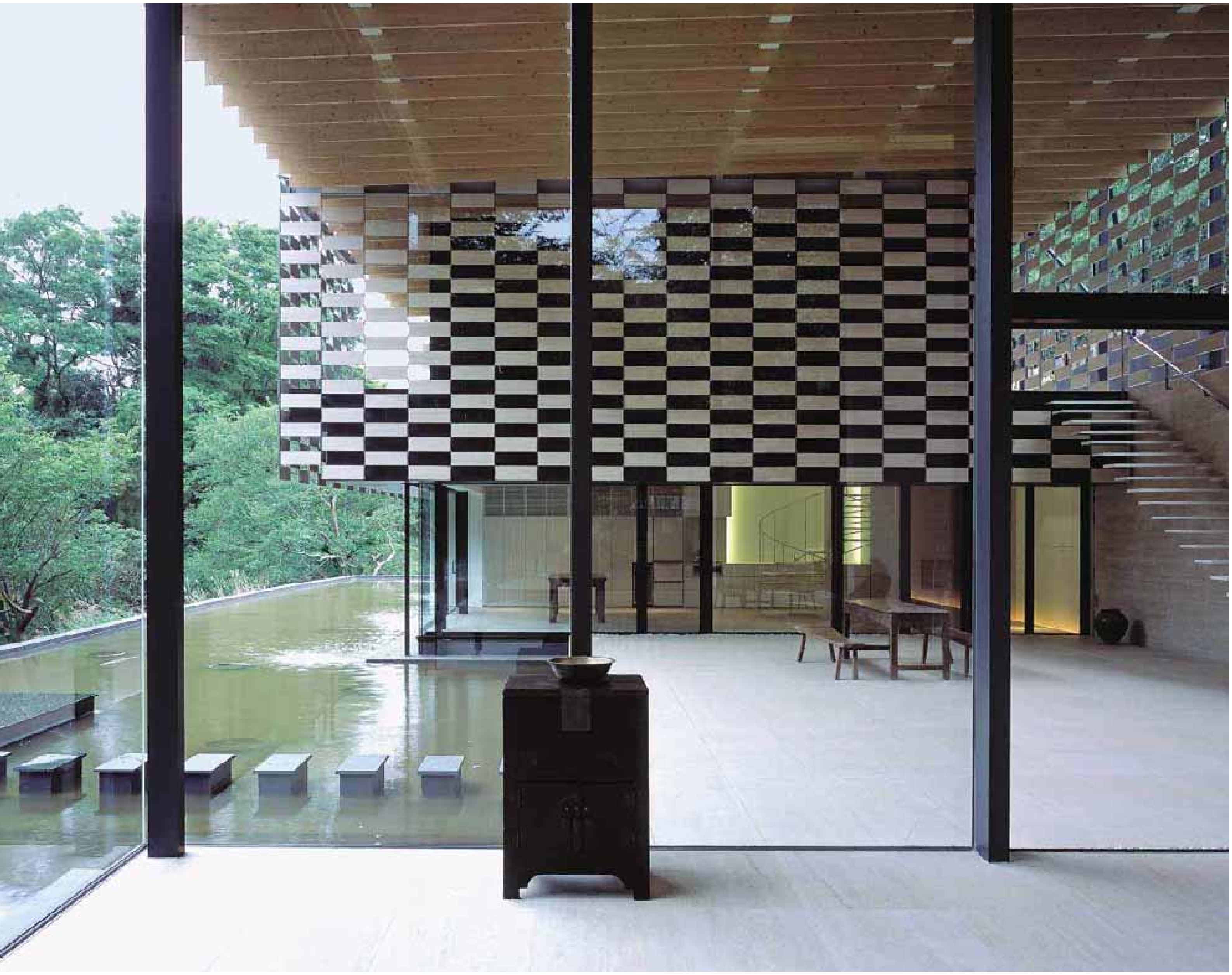
SECOND FLOOR



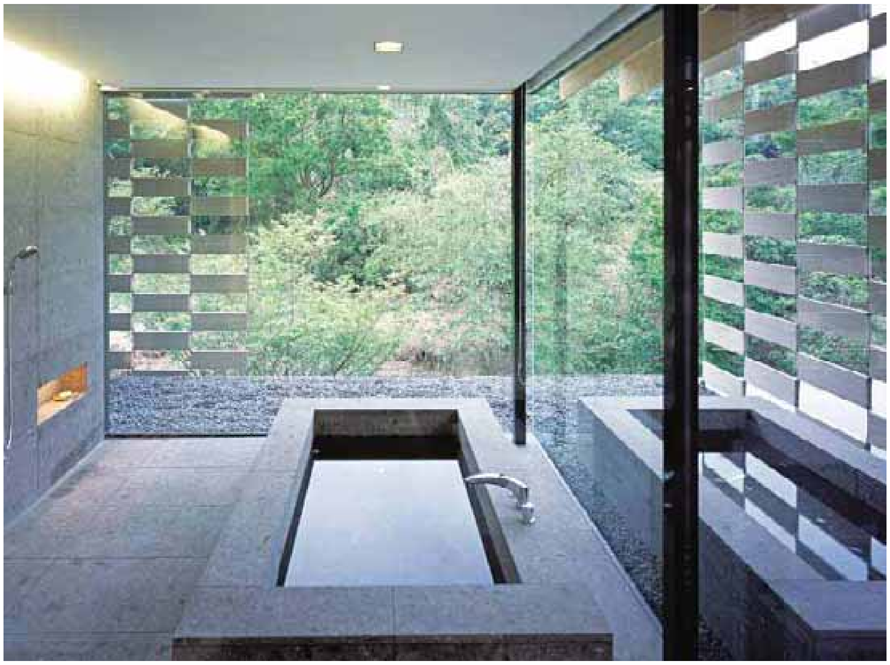
FIRST FLOOR

A checkerboard screen of thin travertine panels, alternating with open rectangles, wraps the house's two main volumes, flanking a covered courtyard (this page and opposite).



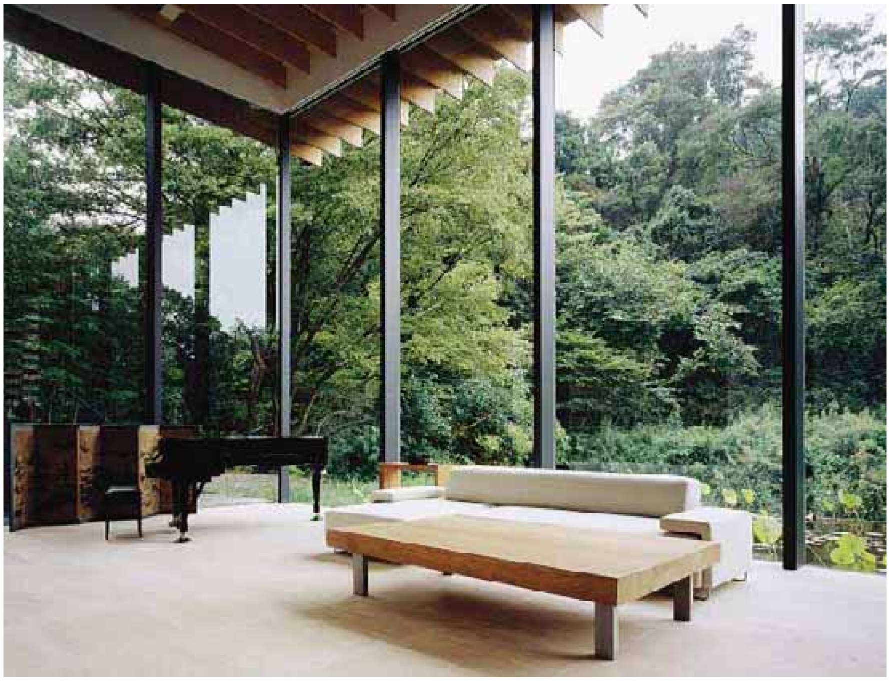


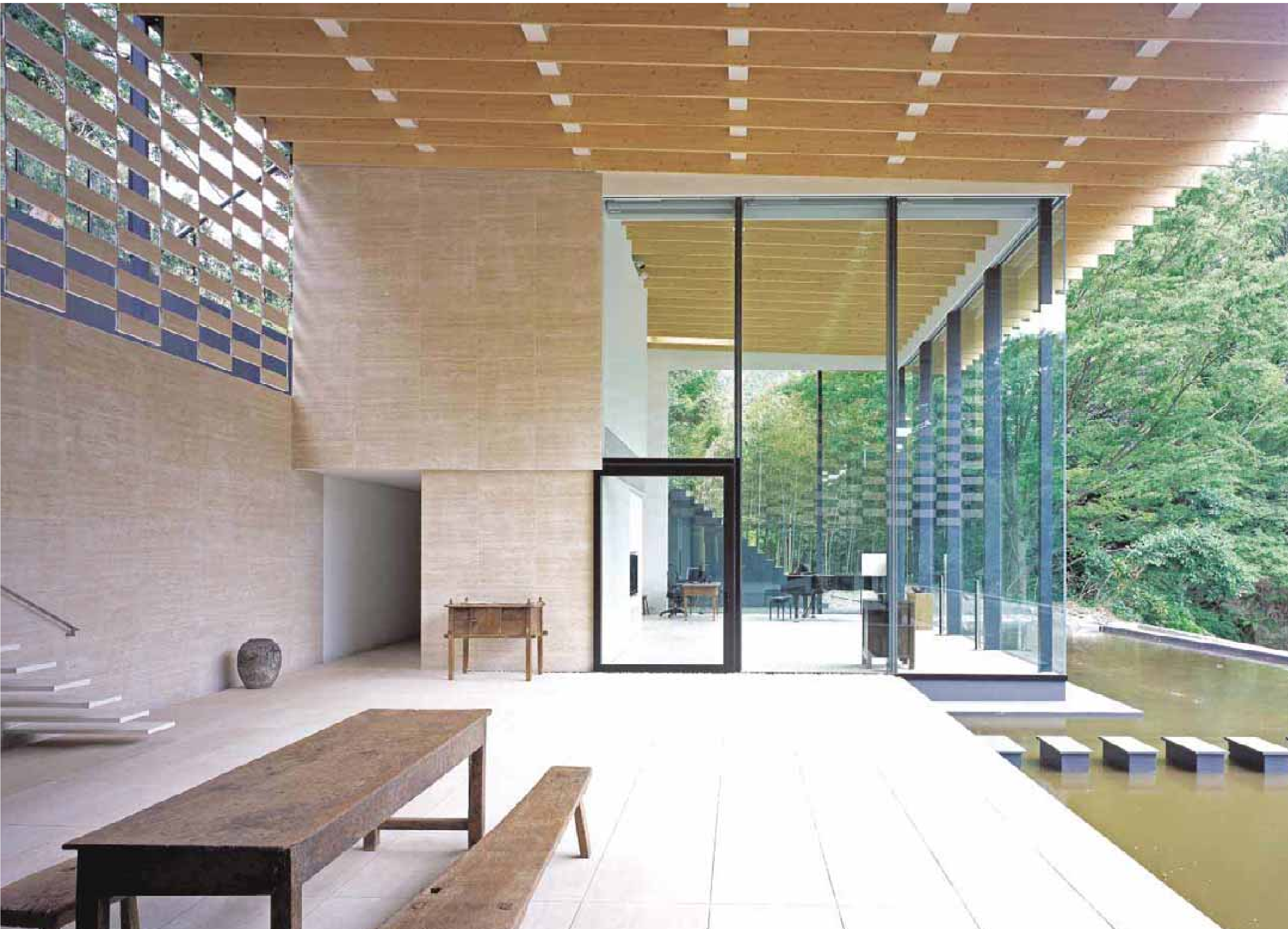
Like the visually light screen and the lotuses themselves, the stairs appear to float (above). Within the enclosed dining/kitchen area, a delicate spiral stair (in background above) rises to the upper floor. There, indoor and outdoor tubs mirror each other, as reflections of the checkerboard shine across the water (right).

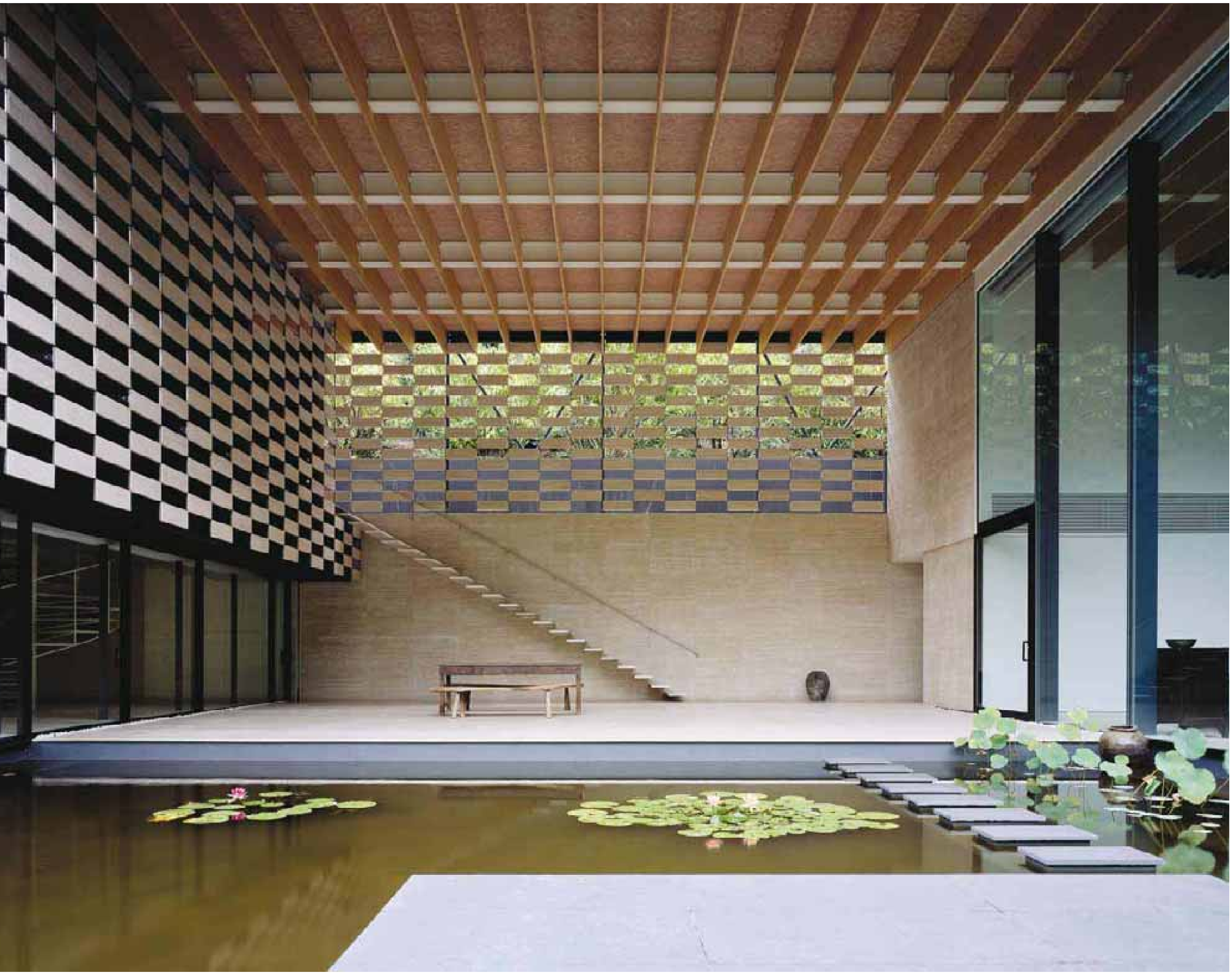


PHOTOGRAPHY: © EDMUND SUMNER/VIEW (THIS PAGE AND OPPOSITE, BOTTOM)

Stepping stones (below) echo the checkerboard rectangles. The glass-enclosed living area (right and below) has no travertine "veil," leaving the room entirely open visually to the landscape. The spacious, sheltered courtyard provides a tranquil and scenic venue for dining alfresco (below).







remove it from the quasi-rural surroundings, dotted with modest houses.

While floor-to-ceiling glazing and multiple entrances link Lotus House inextricably to the landscape, the building politely turns its back on its neighbors. Mediating between the home and its setting, the checkerboard veils parts of the front, sides, and almost the entire back of the painted-concrete building. Though the travertine wrapper filters, without completely eliminating, views in and out of the house, sliding glass walls open every major room to the lotus pond. When the window walls glide aside, the pool's shimmery surface practically joins with the wood floors of the airy, casual bedrooms, where watery reflections ripple across plain white walls. By contrast, the travertine-floored, double-height living room, encased in fixed glass on three sides, is formal, imposing, and more removed from the water (in that case, the pond). There, the adjacent covered terrace softens the room's hard surfaces. Though also grand in size, the cavernous, semi-outdoor terrace is defined by its intricate checkerboard rear wall that allows gentle breezes to flow through the house.

Unlike more conventional stone walls, this wrapper has no structural capacity. Its 1-inch-thick travertine plates, 8-by-24 inches each, neither touch the ground nor relate proportionally to the reinforced-concrete house's spacing of wood beams and steel columns. The checkerboard's independent structure holds each panel in place with a complicated grid of bolted, ¼-inch-thick, stainless-steel flat bars, suspended from the roof beams. Steel columns, 9 feet apart, stabilize the hanging screen. Of course, these heavy-metal underpinnings remain hidden from view, behind the visually floating screen that sways slightly in the breeze and hovers mysteriously 3 inches above the floor.

An architectural oxymoron, the travertine seems to defy gravity. Instead of relegating stone to heavy lifting or superficial veneer, Lotus House's checkerboard reinterprets Japan's traditional see-through screening devices. With many earlier buildings, Kuma had achieved such delicacy through surface-mounted, exterior wood slats. But in this project, thinly sliced stone, secured in a stainless-steel web, yields a similar result. While such apparent lightness, ironically, took heroic effort, Lotus House ultimately reveals Kuma's exceptional sense of delicacy and proportion—and his ability to create entirely unexpected results. ■

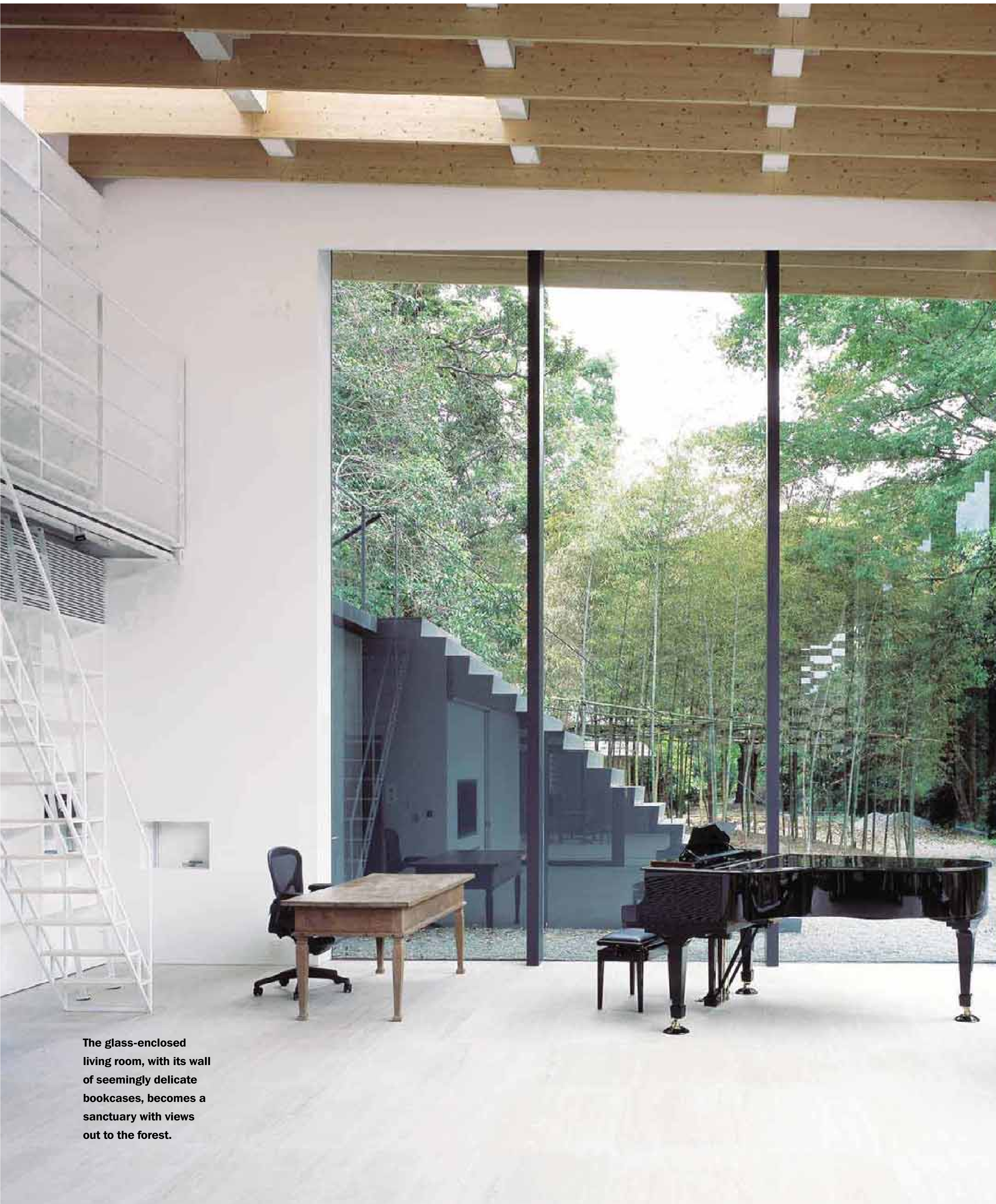
The courtyard's timber roof soars 20 feet above the ground. Suited to entertaining, this central space invites guests to flow over from the living and dining areas.

Sources

Windows and doors: *Tostem*

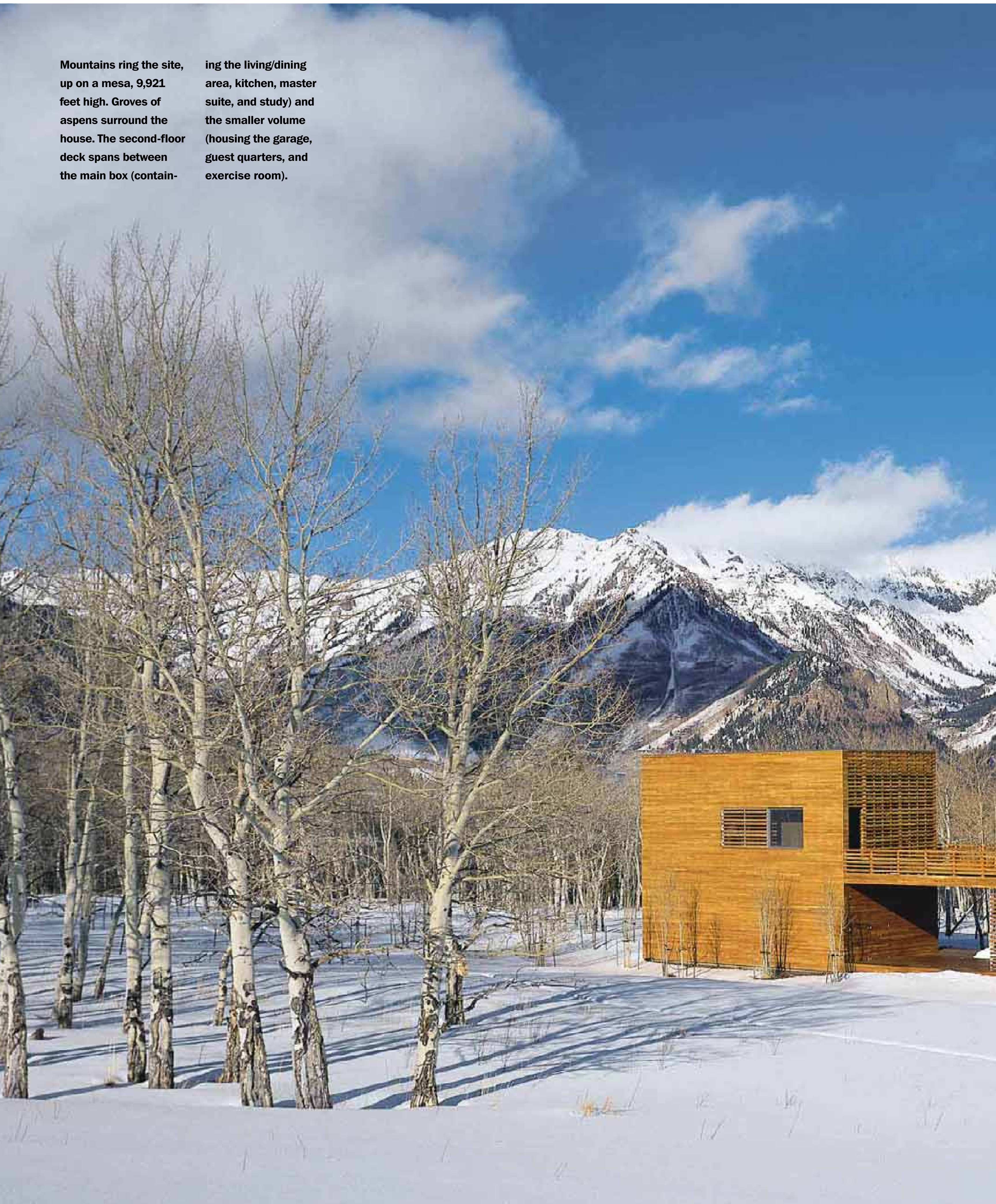
Furniture: *Extra Cappellini; Moroso*

For more information on this project, go to Projects at **www.archrecord.com**.

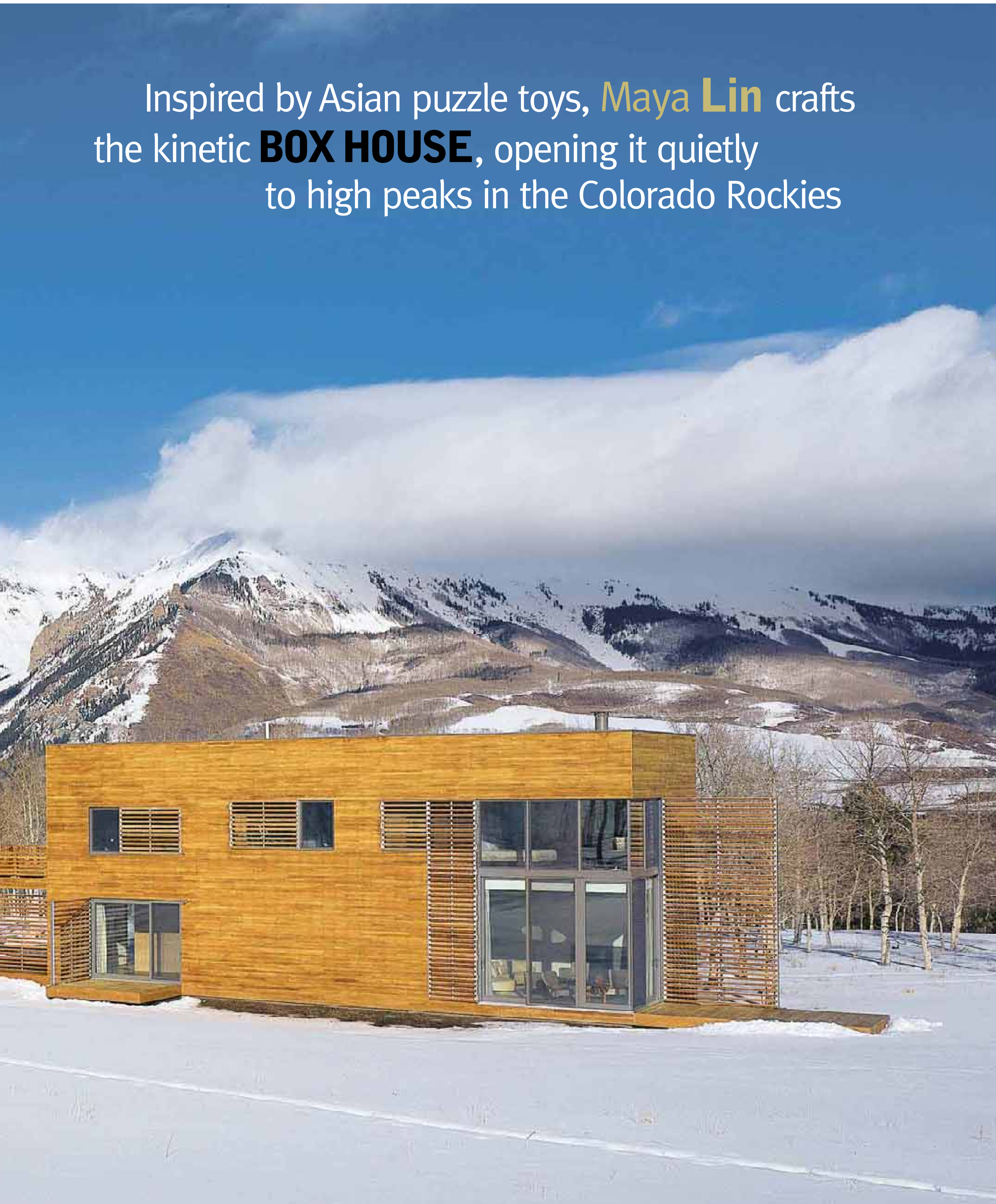


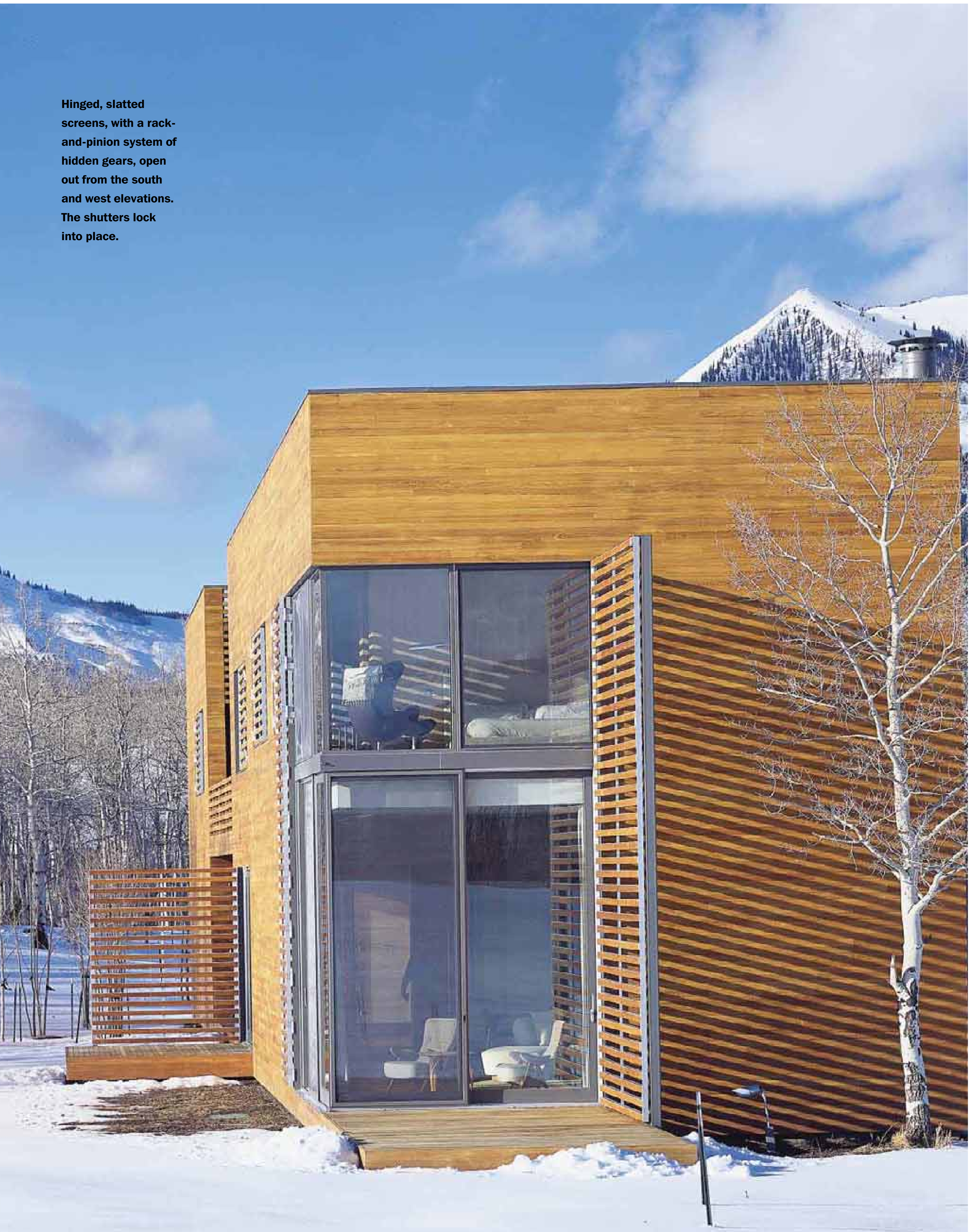
The glass-enclosed living room, with its wall of seemingly delicate bookcases, becomes a sanctuary with views out to the forest.

Mountains ring the site, up on a mesa, 9,921 feet high. Groves of aspens surround the house. The second-floor deck spans between the main box (containing the living/dining area, kitchen, master suite, and study) and the smaller volume (housing the garage, guest quarters, and exercise room).



Inspired by Asian puzzle toys, Maya **Lin** crafts the kinetic **BOX HOUSE**, opening it quietly to high peaks in the Colorado Rockies





Hinged, slatted screens, with a rack-and-pinion system of hidden gears, open out from the south and west elevations. The shutters lock into place.

By Sarah Amelar

Asian puzzle boxes with secret sliding and pivoting panels first inspired Maya Lin's architecture in the Norton Apartment in New York [RECORD, September 1999, page 132]. There, multiple planes folded open or closed, transforming the interior into a pied à terre for one, a home for a family with children, or a space for an elegant soirée. More recently, when Lin received a commission for a house in the Colorado Rockies, the idea of a box toy sparked her imagination once again, but this time, with a full building, she decided to take the notion further.

Drawn to the work of Donald Judd, she was intrigued by the idea of very simple cubes or boxes strewn in the landscape. But as she came to understand the particulars of both the setting and the clients, her Minimalist volumes evolved in site-specific ways, informing the inner and outer workings of this kinetic puzzle—leading to boxes within boxes and a relationship with the surroundings that ranges from quiet to expansive.

"At first glance, my architecture appears reserved—unlike my sculptural pieces, which are more gestural and clearly about the landscape—but the Box House may be deceptively simple," suggests Lin. "As you gradually discover, it's also quite playful."

This tendency toward outward reserve was hardly a problem for the Colorado clients, a couple in their 50s who were already knowledgeable patrons of architecture. Because their primary home, in another state, acts as a magnet for architecture aficionados, they envisioned their mountain retreat as a private place, where they could simply enjoy hiking and bird-watching. So they carefully sited Box House on hundreds of acres, which they generously deeded to a conservation easement. This arrangement will preserve—and protect in perpetuity—much of the wild beauty bordering an increasingly popular ski area. Besides Lin's Box House, the only other structure that can ever rise on the land is a future caretaker's cottage.

The architect then positioned the house so it can't be spotted from any other property. Instead of perching the building majestically on the highest point, she placed it on a lower mesa (9,921 feet high), ringed by mountains, affording panoramic views of the surrounding peaks. A private road (an old rancher's route, already in place) leads the way, with 2 miles of switchbacks, up to the house. "The idea was to create a modest and discreet structure—and then reduce it even further, minimizing your first perception of it," says Lin. Initially, you see only the narrow end of the building's long, rectangular form. Then, as you draw closer, the full composition begins to emerge: two teak-clad boxes, totaling 6,760 square feet on two stories, joined by a second-floor deck. One volume contains the kitchen and main living/dining area beneath the master bedroom and study; the other houses the garage, at grade, rising to the home gym and sole guest room.

Eventually, as this former ranch land becomes reforested, aspens will hide much of the garage component. Already, supple young trees veil the site, giving the impression that the boxes were dropped into an existing forest. The flickering, shadowy light, cast among the aspens, inspired Lin to create large, slatted, operable shutters across broad areas of the elevation and leave open slits between the deck planks. Sunlight filtering through these layers abstractly evokes dappled rays in the forest.

You enter the house from under the central deck, metaphorically a shadowy glade. Then, as Lin puts it, "you float up, spiraling toward the

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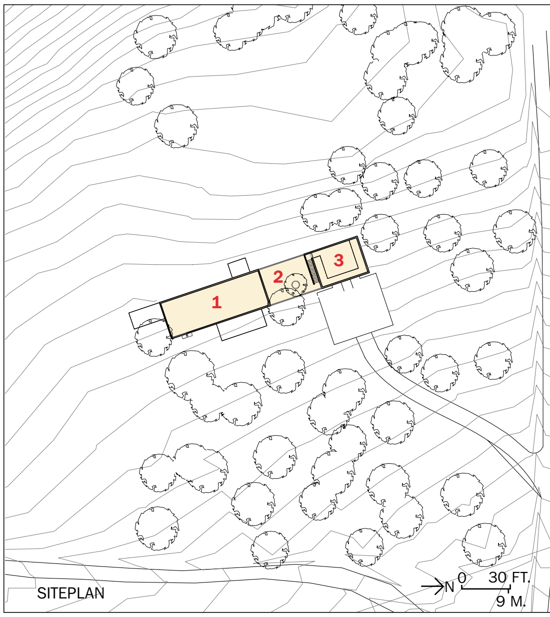
Project: *Box House, Colorado*
Designer: *Maya Lin Studio—Maya Lin, principal; Carl Muelheisen, Corrie Rosen, project managers; Selin Maner, Patri Vientravi, Josh Uhl, project team*
Associate architect: *William Bialosky*
Engineers: *Robert Silman Associates (structural); Burggraaf Associates (mechanical)*
Consultants: *Edwina von Gal (landscape); Tillett Lighting Design*
Interior designer: *Alan Tanksley*

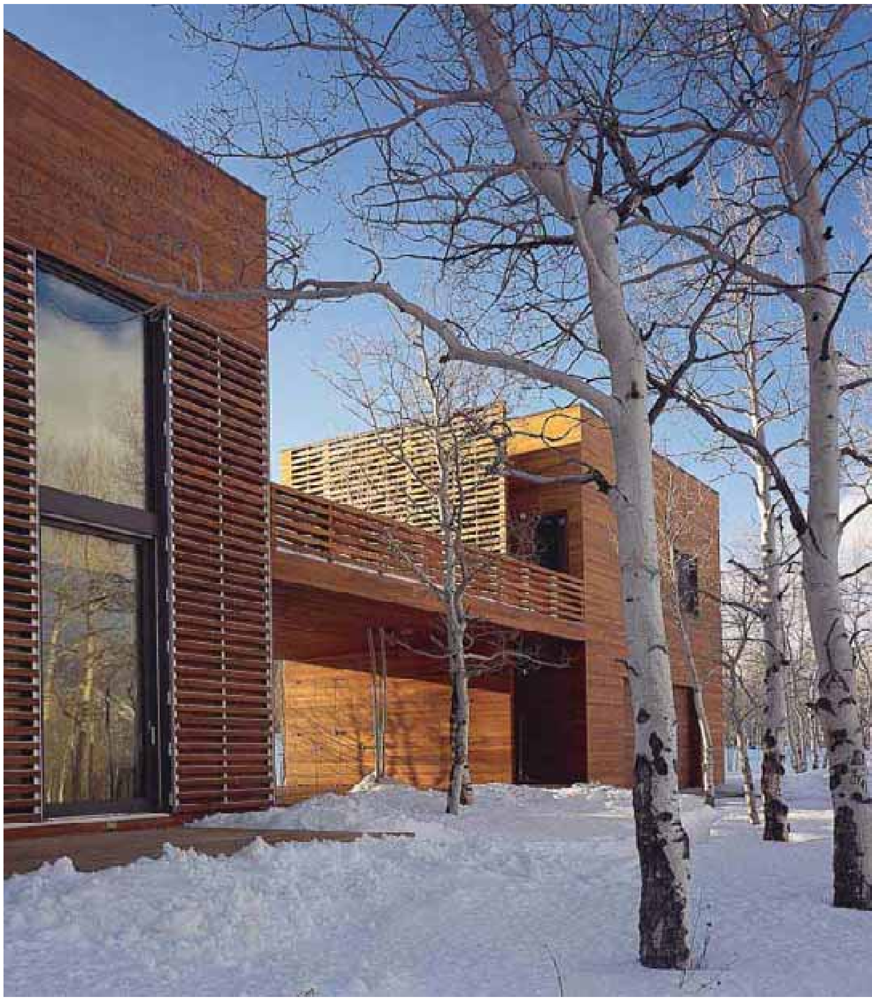
PHOTOGRAPHY: © PAUL WARCHOL

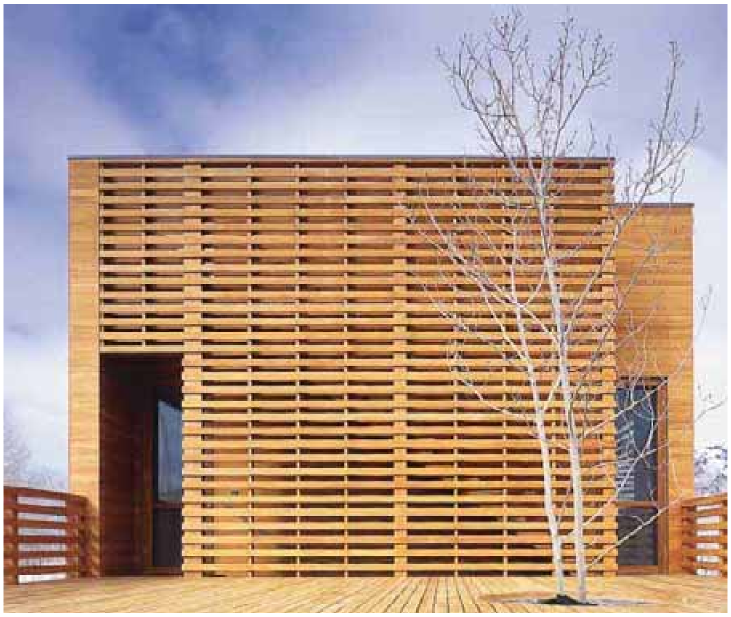
When the large shutters open, glazed areas of the facades become fully revealed (opposite). Light filtering through the slats abstractly mimics rays passing through the surrounding aspens (this page).



1. *Main volume*
2. *Deck*
3. *Garage/guest quarters/ exercise room*

Lin considered making the central deck a drawbridge, but ultimately decided to leave it fixed (right). Entry is from under this platform, into the main house, to the left, and the guest quarters (below two), to the right and up a flight of stairs (opposite). The split between the house's two volumes and the single sapling sprouting up through a hole in the deck (right and opposite) suggest landscape flowing through the building. The tree also recalls Le Corbusier's Heidi Weber Pavilion.



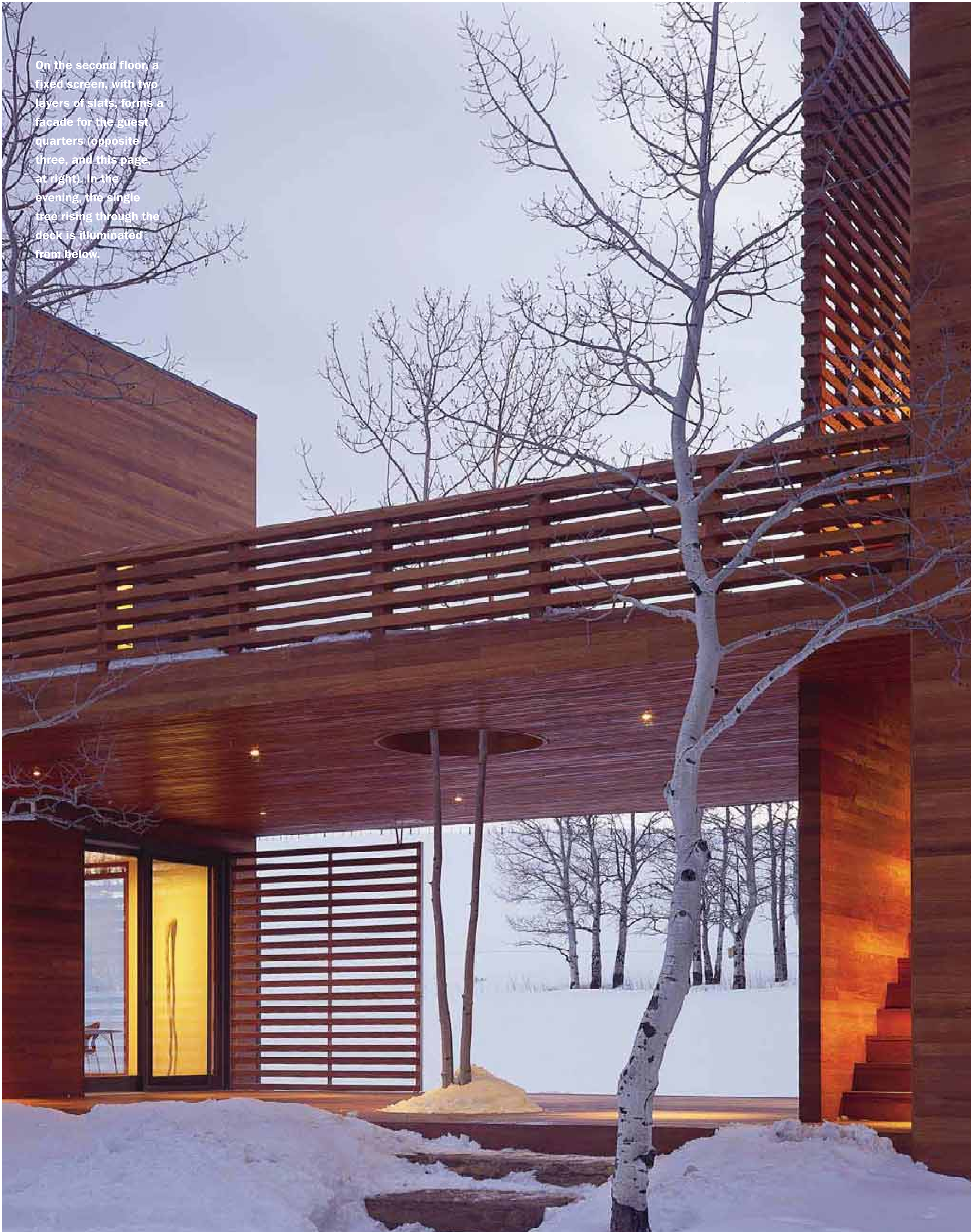


light and views," which she reveals fully from the top platform, on the third story, over the guest and exercise rooms. For this upward journey, the architect borrowed a classic strategy from Japanese houses, designing each window to frame a specific view out, expanding the interior visually into the landscape. The hinged exterior shutters can either shade the large windows, or swing open to reveal the vistas.

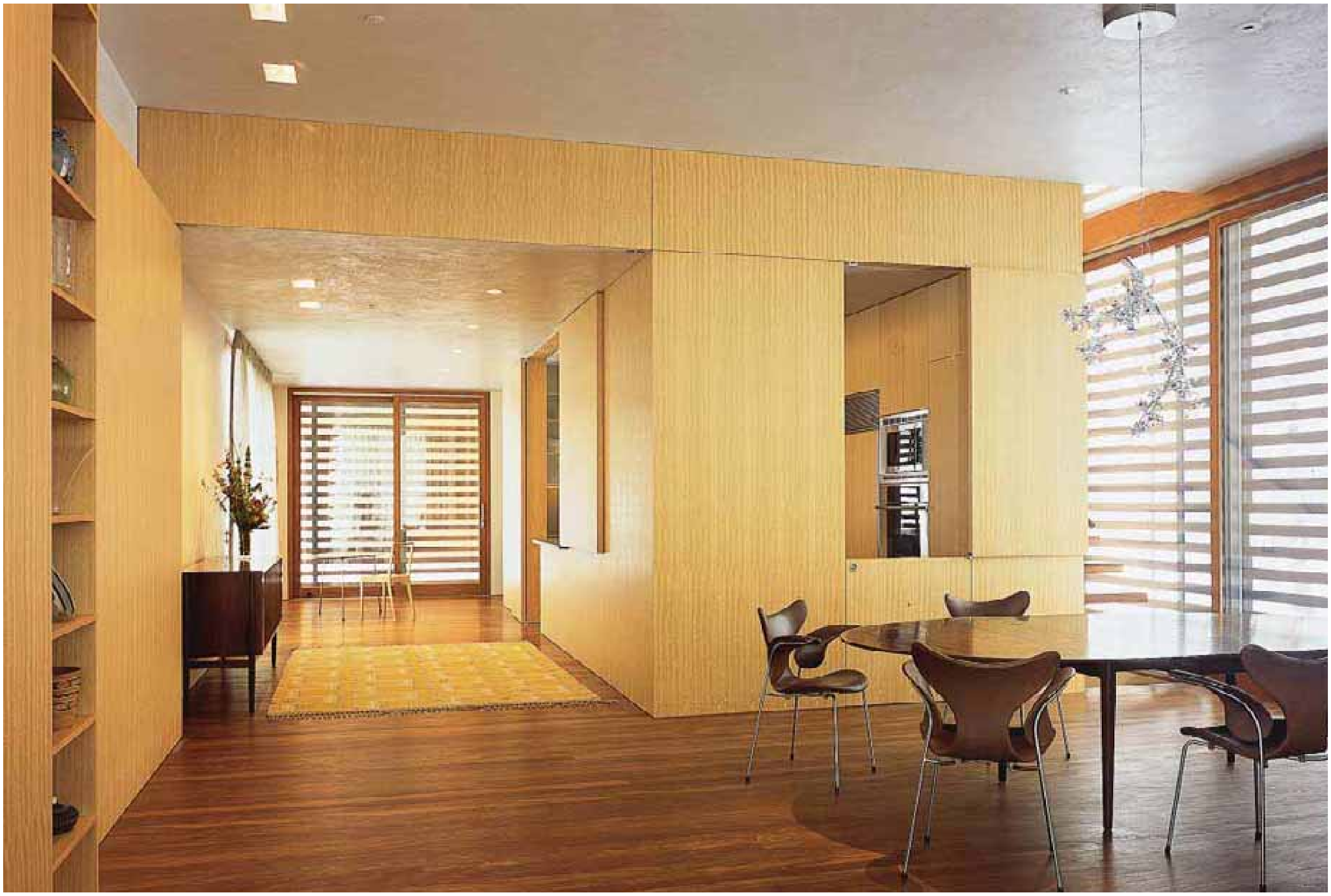
Lin considered giving this house of moving parts a drawbridge between the two volumes, but ultimately decided "that was getting too hokey." Instead, her team focused on making the visually delicate shutters strong and stable enough to permit maintenance workers to climb on them and to prevent any rattling in the wind. "The time we spent making the 140-foot-long gunshot exterior absolutely flat and plumb was pretty dramatic," recalls the contractor, Paul Ricks, of Fortenberry Construction. "Pulling off such a pure and seemingly simple design required a high level of perfection."

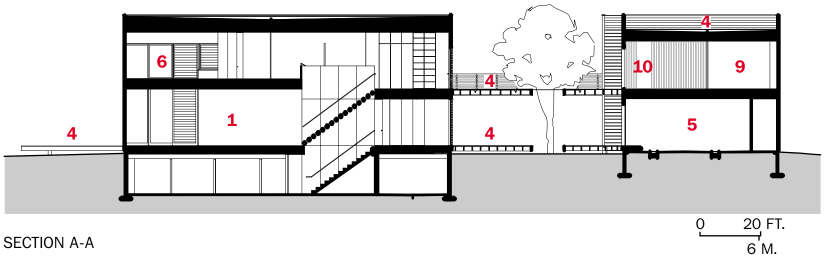
Crafted, even on the exterior, like a piece of fine cabinetry, the house has minimum tolerances of $\frac{1}{16}$ of an inch—though Ricks suggests the finesse typically approaches $\frac{1}{32}$. As Samuel Aarons, who masterminded the hardware detailing, recalls, "Every latch had to be perfect and disappearing. We had to invent on a daily basis—with over 100,000 precision holes for the louvers alone. We deployed a lot of aeronautical technology, including aircraft aluminum, for lightness with strength and rigidity." To lock the shutters in place, he devised a rack-and-pinion system of hidden gears. Rather than flaunt the mechanisms and technology, Lin chose to give them a quiet presence, or in places, even render them invisible.

On the interior, the game of kinetic boxes within boxes proceeds with an assortment of moving panels, including Dutch, pivoting, hinged,

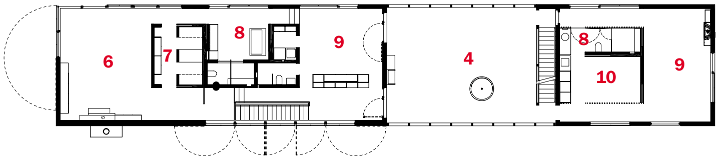


On the second floor, a fixed screen, with two layers of slats, forms a facade for the guest quarters (opposite three, and this page, at right). In the evening, the single tree rising through the deck is illuminated from below.

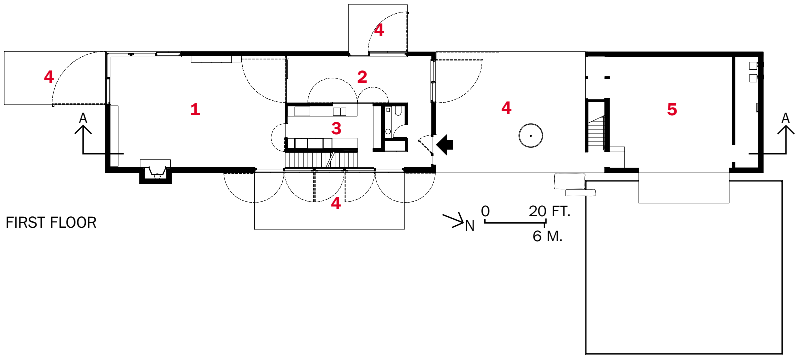




SECTION A-A



SECOND FLOOR



FIRST FLOOR

1. *Living*
2. *Dining*
3. *Kitchen*
4. *Exterior deck*
5. *Garage*
6. *Master bedroom*
7. *Closet*
8. *Bathroom*
9. *Guest room*
10. *Exercise room*

On the ground floor, the eucalyptus-clad inner box, with Dutch doors, houses the kitchen. A big pivoted panel can also close off the entry foyer (above). Cantilevered steps, visually afloat, lead to the second floor (opposite, bottom). On the upper level (opposite, top right), the eucalyptus-paneled box encases the master dressing area and two bathrooms. A long view from the study takes in the master bath, with its floor of greenish Pietra de Cardoza, and a corner of the master bedroom, with its views out to the mountains (opposite, top left).

and pocketing doors. Lin wanted to define and continually redefine the spaces, she says, "without a single stud wall." In the main part of the house, the inner box contains the kitchen, rising like a tower to enclose the master dressing room and bathrooms above. In the guest wing, the inner volume houses an exercise room and bath. While the exterior shell is of teak, framed in wood and steel and lined in hand-troweled plaster, the inner boxes are of pale eucalyptus, playing against the floors' dark afromosia. (All the wood, Lin stresses, was sustainably harvested.) Between the main inner box and the slatted facade, a run of cantilevered steps (wood over steel flanges) seems to float, pulled away from the flanking surfaces. The system of moving parts relies visually and, to some extent, functionally on the precise alignment of reveals, seams, and figured wood grain, as well as the articulation of separate parts. The multiple panels provide myriad configurations, including a study with a desk that folds down like a Murphy bed and a kitchen that opens partially with a bar counter or closes up completely into a neatly packed box.

Well crafted inside and out, the nesting volumes utter not so much as a creak. The house maintains a quiet presence among the aspens, but if you peel back its layers and open its boxes to the sun's rays, the whole ensemble becomes animated—and really begins to speak. ■

Sources

Lighting: *Nulux; Louis Poulsen; Edison Price; Bega; Iris; BK Lighting; Hekowa*

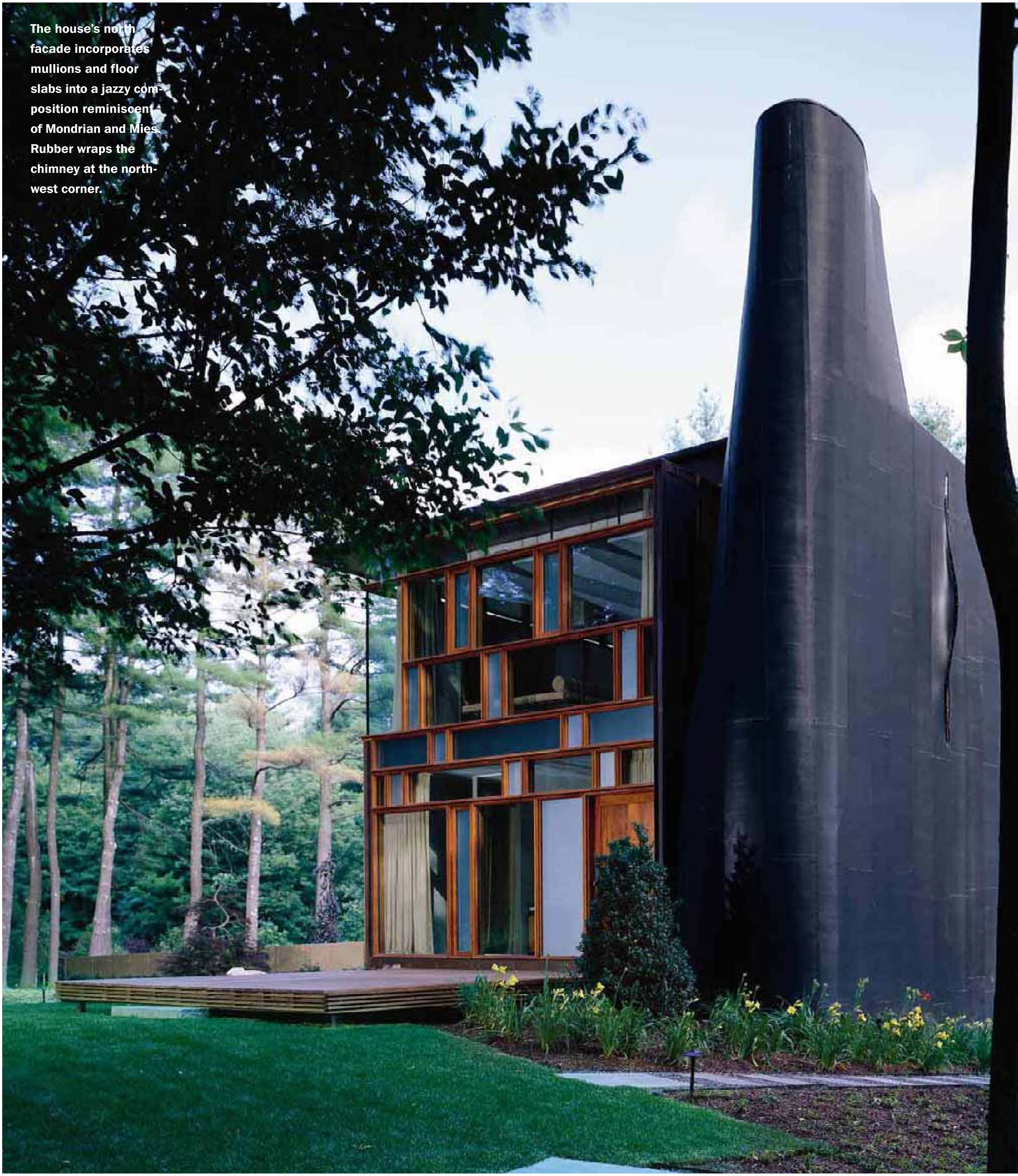
Glass: *Sevasa USA*

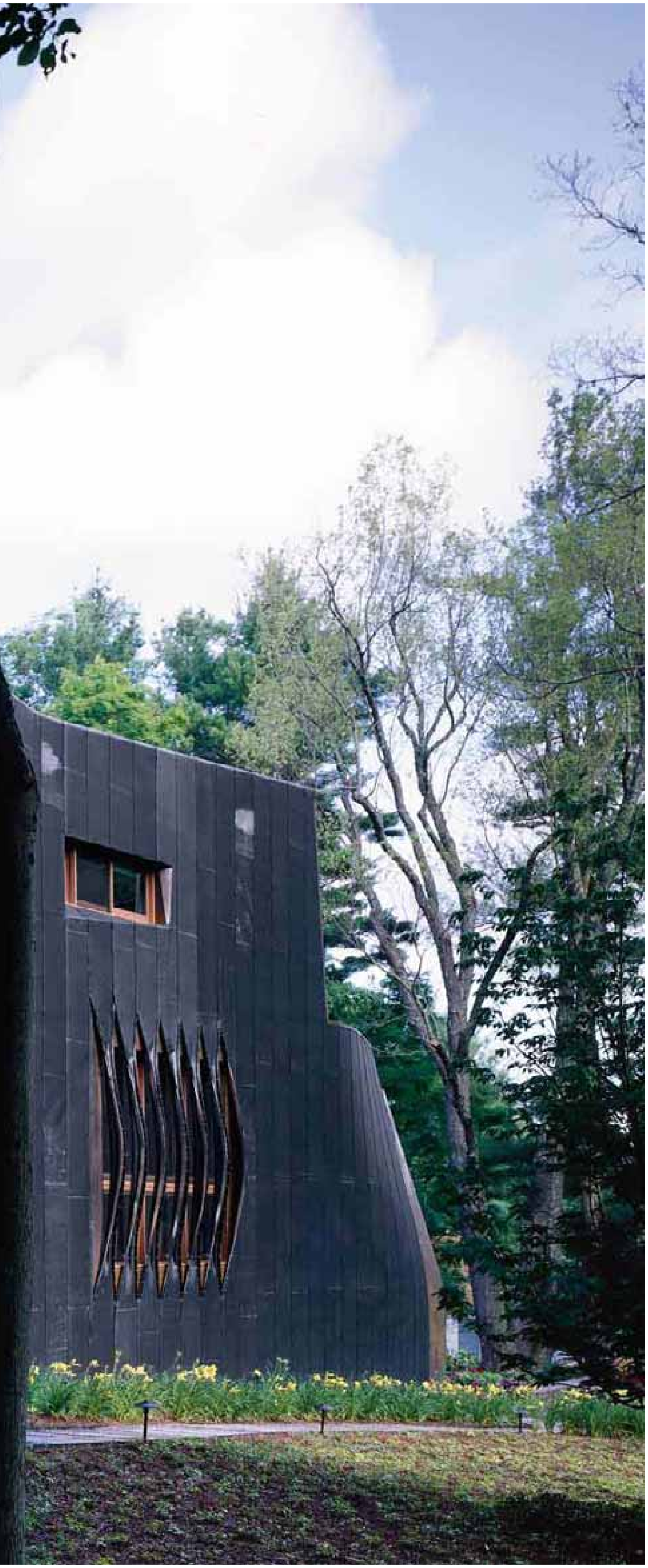
Plumbing fixtures: *Dornbracht; Lefroy Brooks; Duravit; WetStyle; Speakman; Blanco America*

Appliances: *Sub-Zero; Bosch; Fischer & Paykell; Miele; Gaggenau*

For more information on this project, go to Projects at **www.archrecord.com**.

The house's north facade incorporates mullions and floor slabs into a jazzy composition reminiscent of Mondrian and Mies. Rubber wraps the chimney at the northwest corner.





With the NEW ENGLAND HOUSE, clad in black rubber and cedar, Office dA reinvents the cube

By Fred Bernstein

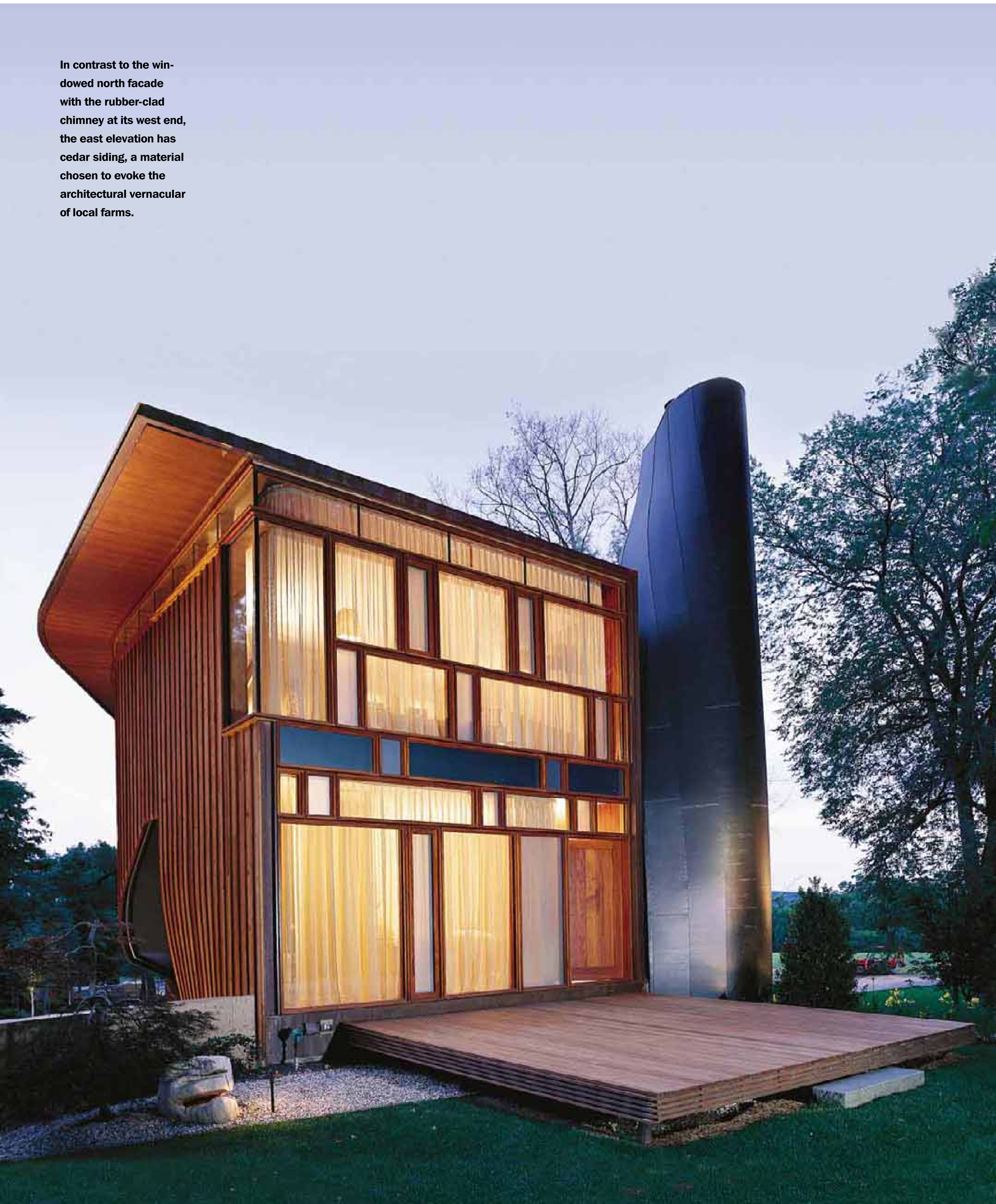
Twenty-five years have passed since the Rubik's Cube was a marketing meteor, but as a metaphor, it still has force for Monica Ponce de Leon. Each year, at Harvard's Graduate School of Design (GSD), she teaches a studio named for the maddening puzzle, which offers an important lesson: When a volume's exterior is truly linked to its interior, getting the outside right may require tireless manipulation of the inside.

Ponce de Leon and Nader Tehrani, her GSD colleague and partner in the Boston firm Office dA, have created a house that demonstrates that challenge. The typical American approach to home design, in which each new space adds a new volume, held no appeal for them. "This house," says Ponce de Leon, "is the opposite of sprawl." That, and the desire to get the two-bedroom, 2,600-square-foot interior up high enough to give the owners treetop views, resulted in a nearly cubic building.

But there is nothing simple about this cube, which twists and turns in plan and section in an almost dizzying profusion of material and formal explorations. Tehrani and Ponce de Leon, who have been working together since they partnered on their GSD thesis in 1991, consider their projects built essays. In this case, the clients, a young couple, set the bar high: Collectors of contemporary art, they imagined their land as a place

Fred Bernstein contributes to The New York Times *and many design publications.*

Project: *New England House*
Architect: *Office dA—Monica Ponce de Leon, Nader Tehrani, principals; Hamad Al-Sultan, Tali Buchler, Albert Garcia, AIA, Kristen Giannattasio, Lisa Huang, Elise, Shelley, design team*
Interior designer: *Manuel de Santaren*
Engineers: *Bill Bishop (structural); Foresight Land Services (civil); Sun Engineers (mechanical); Johnson Engineering (plumbing); Race Mountain Tree Services (landscape)*



In contrast to the windowed north facade with the rubber-clad chimney at its west end, the east elevation has cedar siding, a material chosen to evoke the architectural vernacular of local farms.

for site-specific artworks, of which the Office dA building, a weekend house, would be the first.

On the site, extending over more than 30 acres in western New England, half a dozen old farm structures already stood around an oval "village green." Tehrani and Ponce de Leon wanted the house to mine—as well as undermine—local building traditions. For the east elevation, which visitors see from the driveway, and the south facade, which they pass on their way to the front door, the architects chose shiplap and board-and-batten siding, materials that, Tehrani suggests, "emerge from the language of the farm." The more private north and west facades, however, were free to speak languages of the architects' own invention.

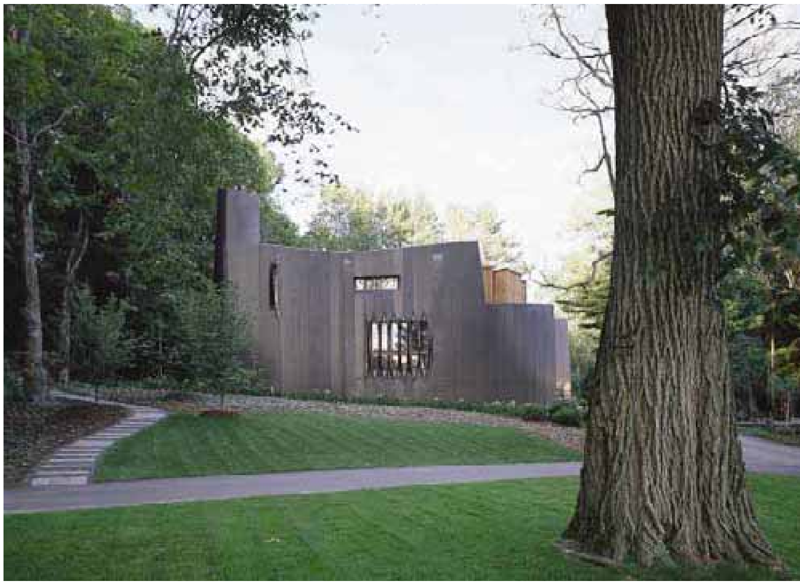
Of course, even the two "contextual" facades are full of surprises. The three-story building's east side, deftly camouflaging a trio of garage doors, is largely opaque, but with a bulge (containing the interior stairway) that looks as if a seismic shift had created it. The south facade's horizontal siding turns a corner onto this vertically clad east elevation—one of several instances when the house's architectural effects overlap. At the upper level, the south elevation bends loosely around the three parts of a bathroom—the bathtub, sink, and toilet—perhaps in homage to the idea that form could simply follow function.

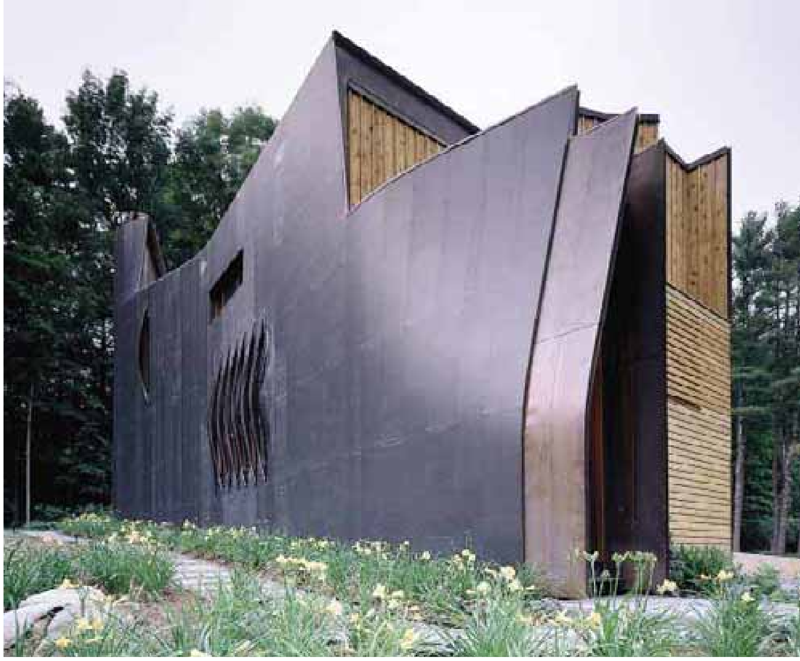
THE OWNERS IMAGINED THEIR LAND AS A PLACE FOR SITE-SPECIFIC ARTWORKS—STARTING WITH THE HOUSE BY OFFICE dA.

On the north side, where the view out is the most private—directly into the woods—the architects created a window system that combines mullions and exposed floor slabs in a jazzy composition reminiscent of both Mondrian and Mies.

The west elevation, sheathed in black-rubber roofing, isn't reminiscent of much at all. In more typical applications of this rubber, says Tehrani, "you'd just heat it up and glue it together; the seams end up where they end up." But he and Ponce de Leon investigated ways to extract precision from a material that is synonymous with imprecision. To create tailored openings for vertical slit windows, the fabricators, using digitally produced templates, cut the sheets, stretched them over metal struts, and folded the material back onto itself before securing it with rivets.

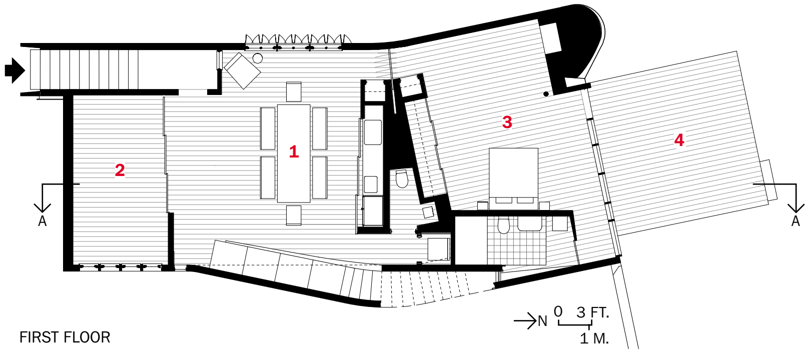
Inside, too, Office dA avoided domestic clichés. Much of the



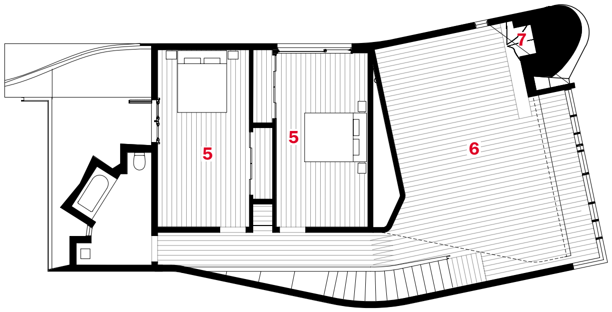


Windows resembling gills (top and above) bring daylight into the dining area. Entry is via an outdoor stair rising between the cedar south facade and rubber west one (above).

1. *Kitchen/dining*
2. *Playroom*
3. *Master bedroom*
4. *Porch*
5. *Bedroom*
6. *Living room*
7. *Fireplace*

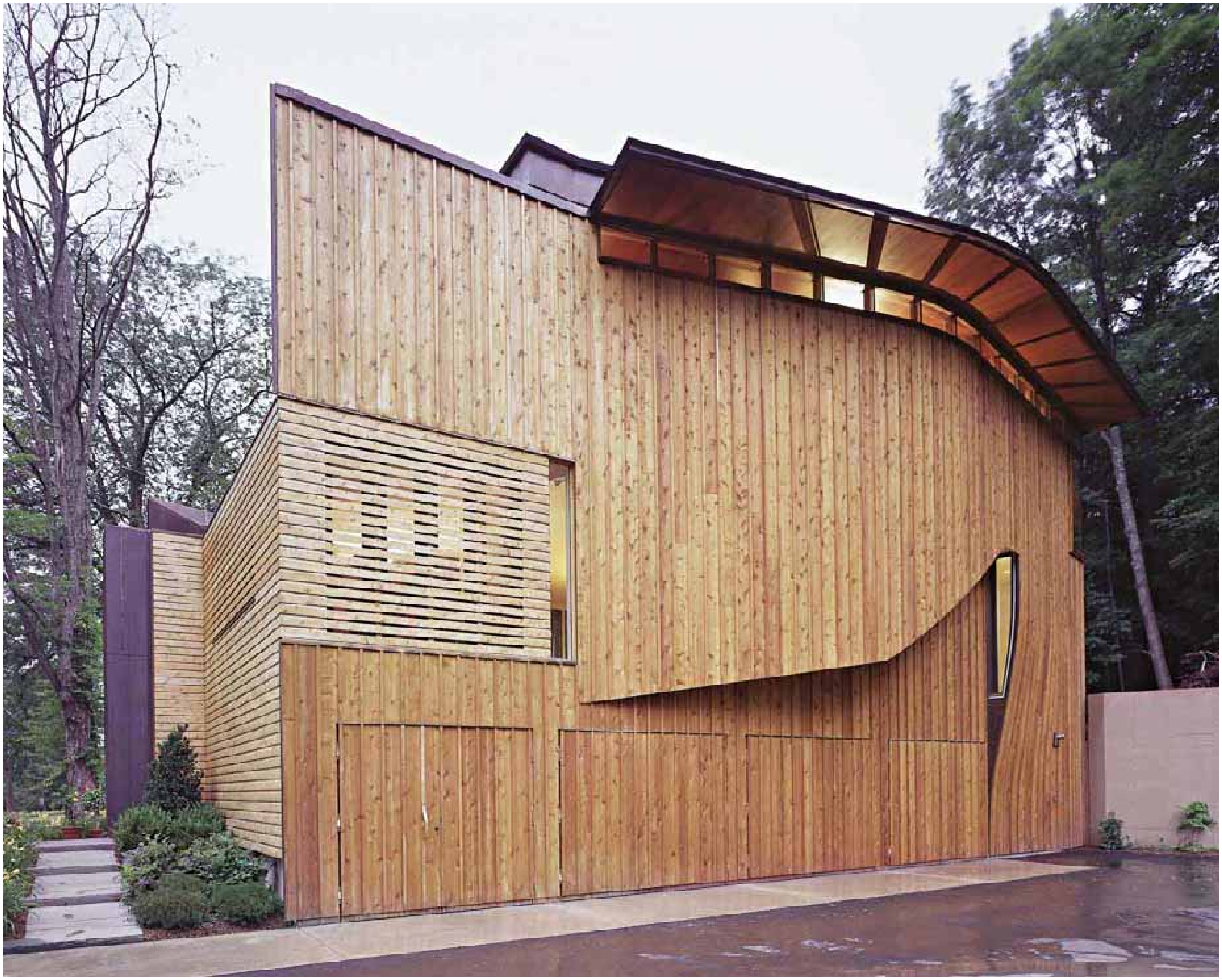


FIRST FLOOR

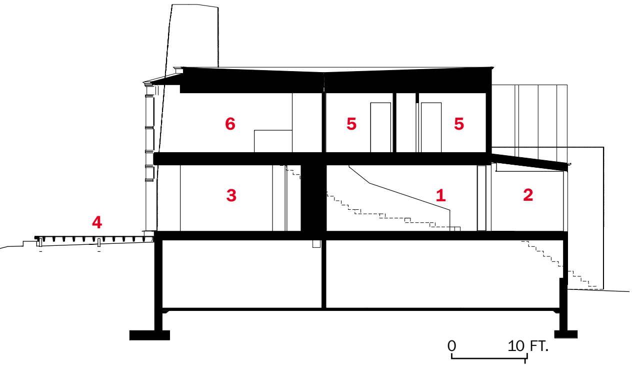


SECOND FLOOR

PHOTOGRAPHY: © JOHN HORNER PHOTOGRAPHY, EXCEPT AS NOTED

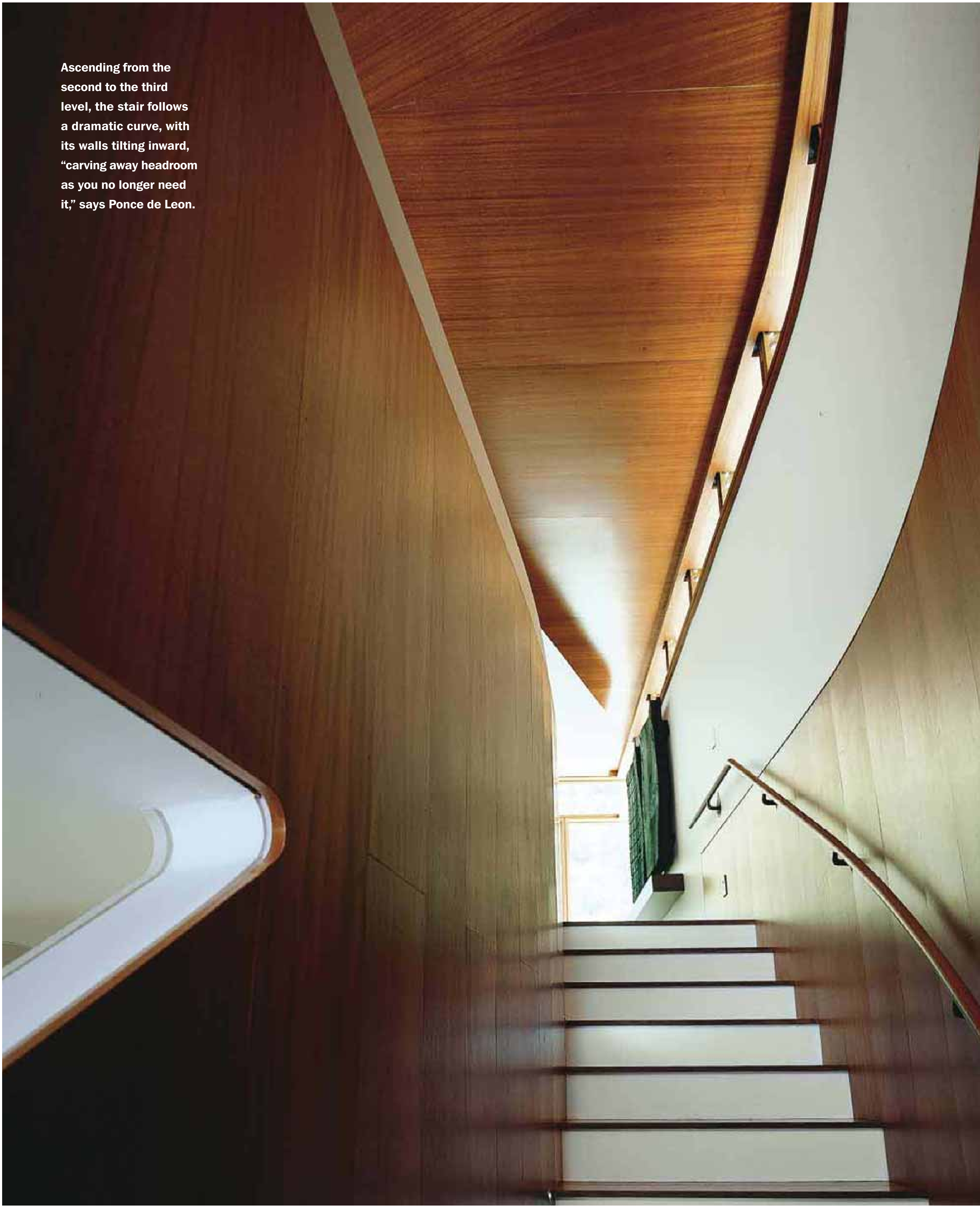


The east facade (above and right) camouflages garage doors. The bulge contains a clerestory-lit interior stair. Where the south facade's horizontal cladding turns a corner (above), it overlaps the east elevation's vertical siding.

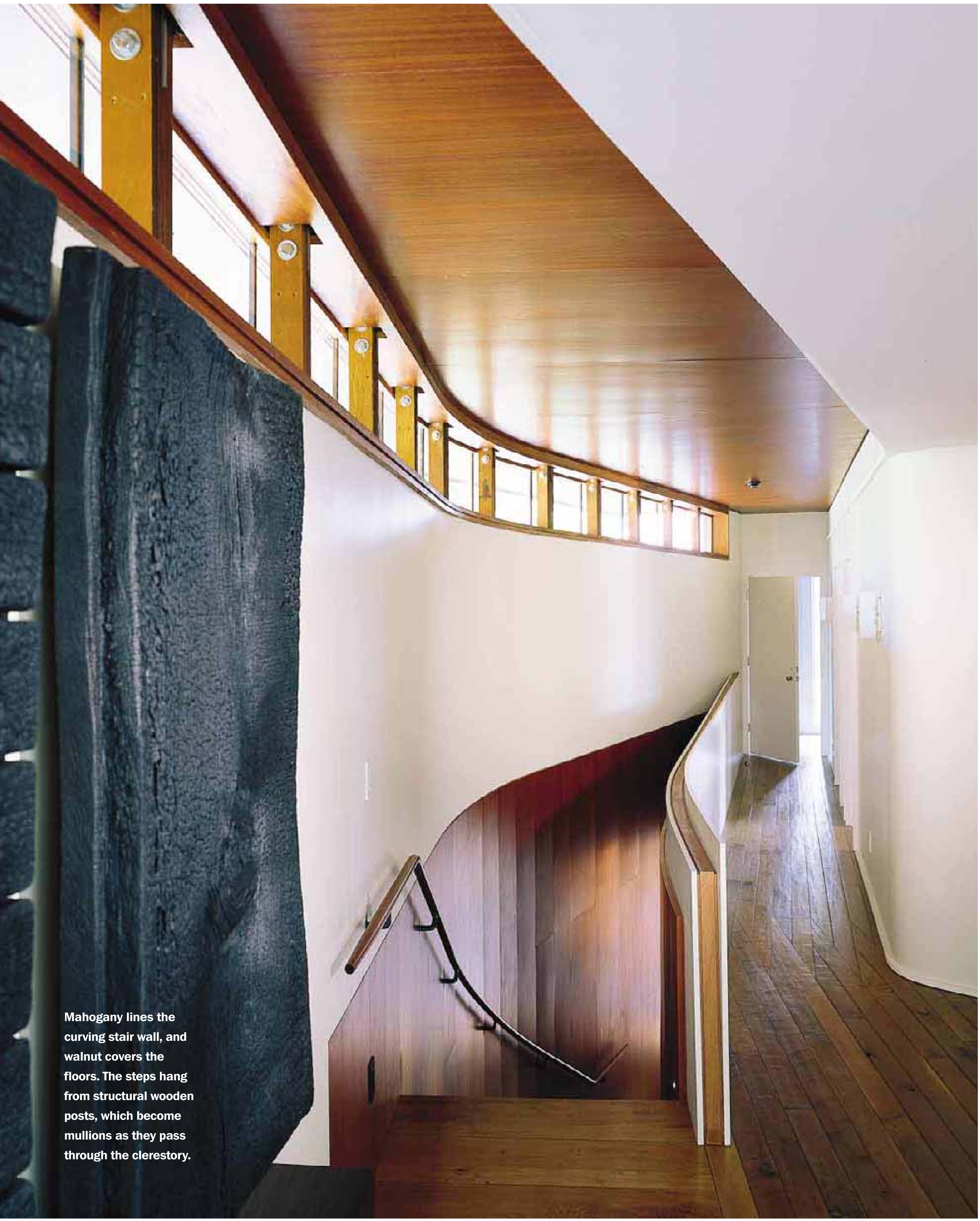


SECTION A-A

1. *Kitchen/dining*
2. *Playroom*
3. *Master bedroom*
4. *Porch*
5. *Bedroom*
6. *Living room*

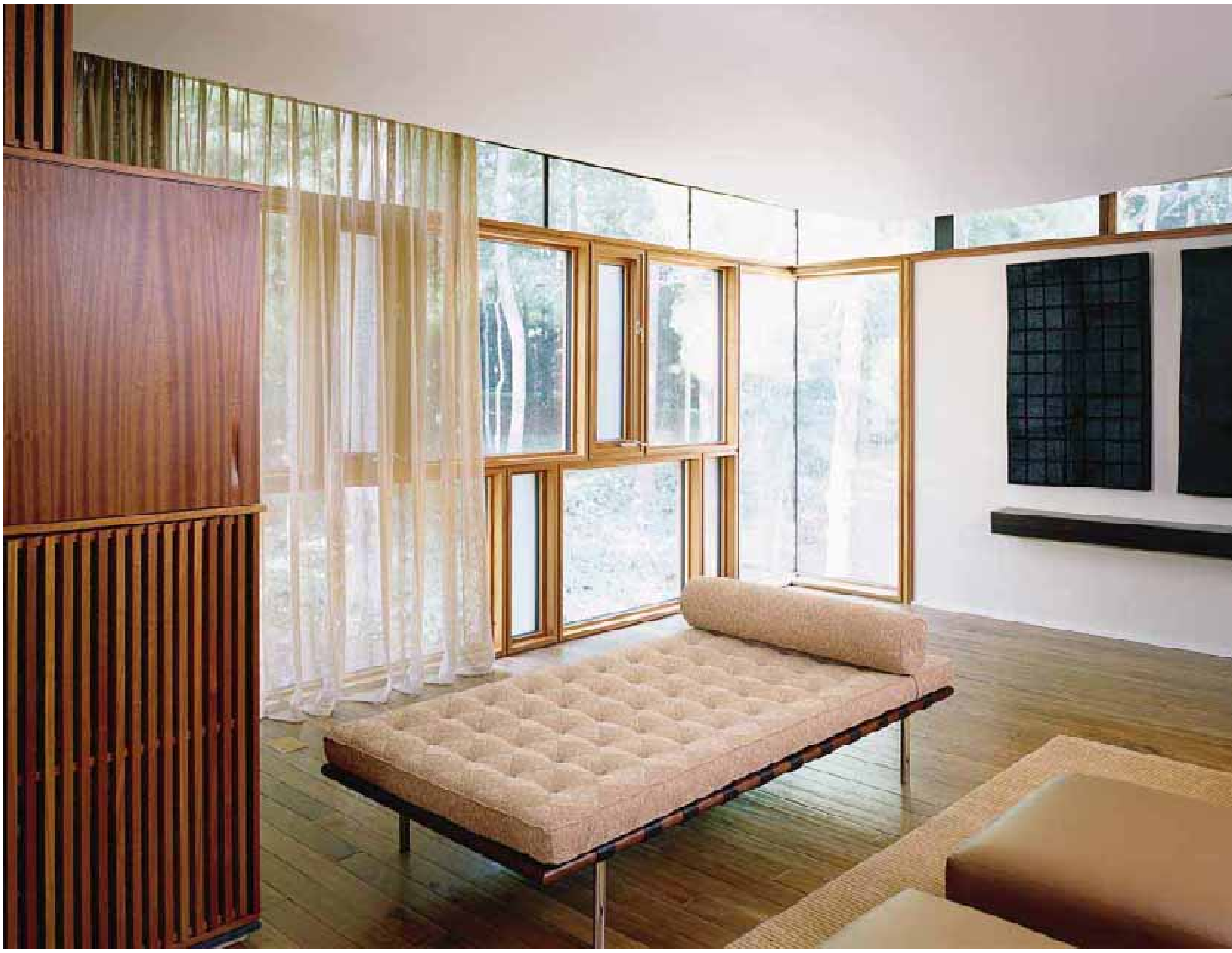


Ascending from the second to the third level, the stair follows a dramatic curve, with its walls tilting inward, "carving away headroom as you no longer need it," says Ponce de Leon.



Mahogany lines the curving stair wall, and walnut covers the floors. The steps hang from structural wooden posts, which become mullions as they pass through the clerestory.

In its proportions and overlap of vertical and horizontal patterns, the mahogany fireplace surround (below and right) suggests a microcosm of the house's southeast corner. The living room's syncopated composition of fixed and operable windows (right) faces north, into the woods. Manuel de Santaren and Carolina Tress-Balsbaugh collaborated on the interior design.

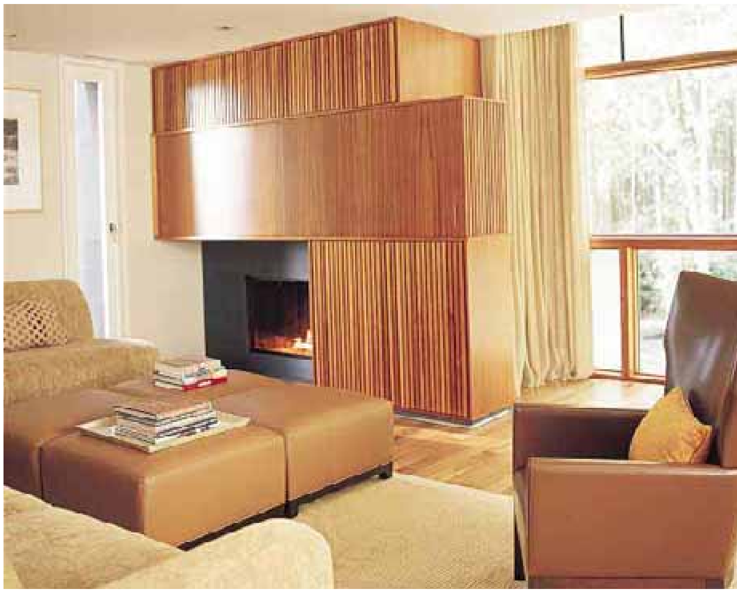


ground floor is relegated to the garage, but the architects didn't permit anything as simple as a door from there to, say, a mudroom. The entry is via an outdoor stairway, where the cedar south facade and rubber west one peel apart, creating a slit that suggests a journey to the center of the earth. The walls bracketing the stairs tilt in, "carving away headroom as you no longer need it," says Ponce de Leon, explaining one of the moves that show the careful tailoring of plan and section. Making additional references to the facades, many of the interior elements (some created in collaboration with Boston designers Manuel de Santaren and Carolina Tress-Balsbaugh) seem to bring exterior components inside. A mahogany fireplace surround, for example, suggests, in its composition and overlap of vertical and horizontal patterns, a microcosm of the house's southeast corner. Inflected by the exterior cladding, some of the windows look through horizontal wood slats, while others are pinched by bands of rubber.

And the stairway, which leads from the second to the third floor, includes treads and risers that are rarely uniform. That's because this flight bows out from the east facade, mimicking the curves of the village green and placing the stair, as the architects say, "conceptually outside the building." With nothing supporting the steps from underneath, these elements hang from wooden posts, which double as mullions where they pass through clerestory windows. It is a structural tour-de-force.

Not a tour the architects are likely to take a second time. And now that they know how to whip rubber into shape, Tehrani and Ponce de Leon (whose current projects include an apartment building in Boston) have no immediate plans to attempt it again. After all, they have new puzzles to solve. Rubik—himself a professor of architecture—would approve. ■

PHOTOGRAPHY: © JEFF MCNAMARA, COURTESY OF METROPOLITAN HOME



Sources

Curtain wall: *Duratherm*

Rubber cladding: *Firestone*

Windows: *Marvin; Duratherm; Lou Boxer (custom)*

Paints and stains: *Benjamin Moore*

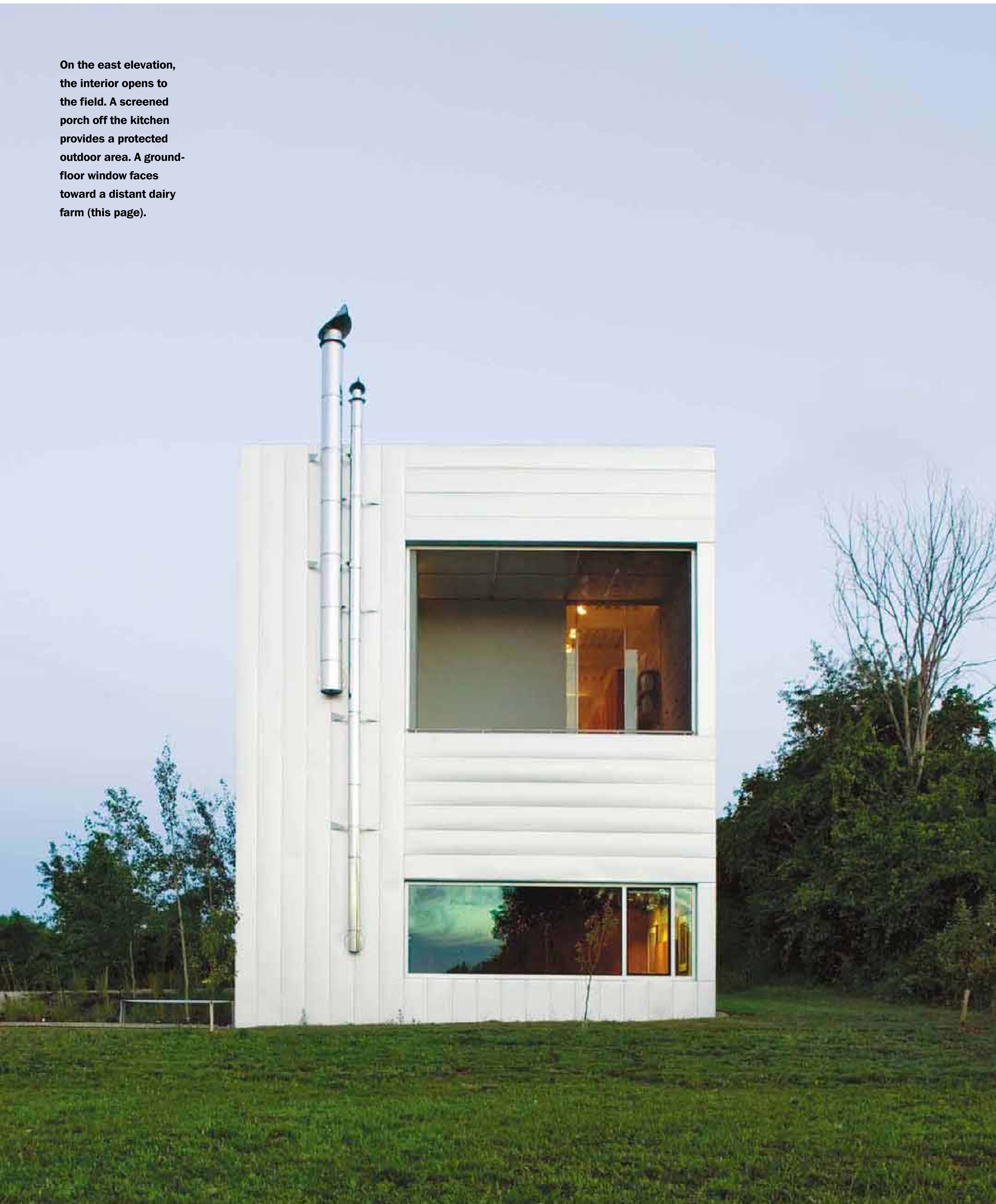
Lighting controls: *Lutron*

Tile: *Dal-Tile; American Stone; Discover Tile*

Hardware: *Baldwin; Rocky Mountain; Richard Wilcox*

For more information on this project, go to Projects at **www.archrecord.com**.

On the east elevation, the interior opens to the field. A screened porch off the kitchen provides a protected outdoor area. A ground-floor window faces toward a distant dairy farm (this page).



Taking cues from Wisconsin dairy barns, Wendell **Burnette** shapes the **FIELD HOUSE's** simple, silvery form

By Jane F. Kolleeny

Siting his house amid the large dairy barns, grain silos, and humble homesteads that speckle the rural landscape of tiny Ellerton, Wisconsin, Dr. Robert Geller did not want the neighbors viewing him as intrusive, building a colossal mansion. But, as he told his architect, Wendell Burnette, AIA, he definitely wanted a Modernist home. The result: a 5,000-square-foot, zinc-galvanized-aluminum box, inspired by the farm structures on the surrounding fields, which extend like checkerboards across the vast, predominantly flat landscape. The spare, elongated exterior of this building, called Field House, reinterprets the utilitarian aesthetic of the agrarian terrain, complementing rather than overshadowing its neighbors. Beyond the house's apparent simplicity, however, a refinement in detail and overall composition gradually reveal themselves.

In this part of eastern Wisconsin, the landscape changes vividly with the seasons. During the spring, verdant fields of rotating crops sprout up, providing fodder for cattle in their growing season. In winter, those same fields turn into a frigid, white expanse. The client, an oncologist, asked for a peaceful retreat that could provide solace from his high-stress job. At the outset of the project, he wrote a brief, succinctly outlining his desire for a home attuned to the "land, sky, and seasons." Interpreting this directive, Burnette says he envisioned a house that would "allow a dialogue with the changing light and times of year—a place that would not be overtly expressive, but instead, recede into the landscape."

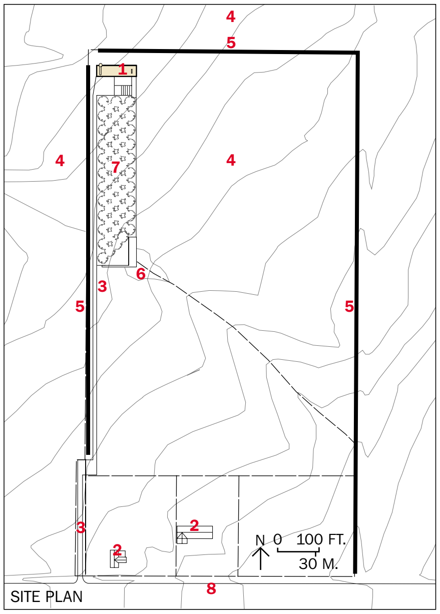
Turning the building away from the harsh winter winds and opening it to the southerly sun, Burnette positioned Field House on the northwest corner of a 16-acre crop field, which a local farmer leases and tends. Reached by the owner's straight, ¼-mile-long access road and nestled up to existing rows of trees along the property's edge, the building offers both privacy and spacious views. While discreet windows to the north (the house's back) and the east frame vistas of far-off dairies, the south elevation opens more expansively toward the field, the sky, and distant farms.

From afar, the structure appears as a simple, silvery rectangle. More closely examined, its long south facade reveals 16-inch-wide panels of

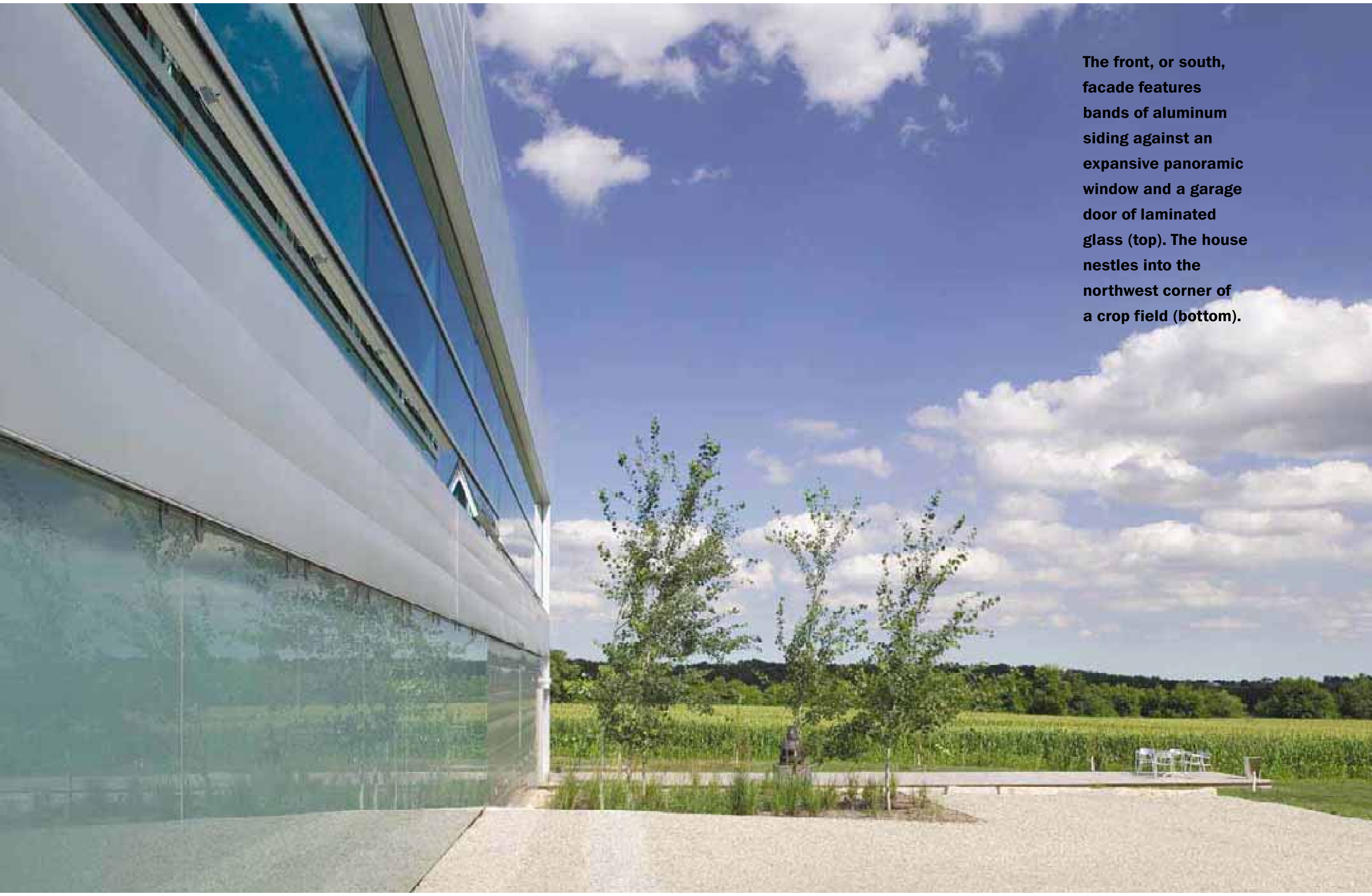
Project: *Field House, Ellerton, Wisconsin*
Architect: *Wendell Burnette Architects—Wendell Burnette, AIA, Scott Roeder, Matthew Trzebiatowski, AIA, Joe Herzog, design team*
Engineers: *Rudow + Berry (structural); Thelen Engineering (mechanical); Harwood Engineering (electrical); Point of Beginning (civil)*
Consultants: *Michael Boucher Landscape Architects (landscape)*

PHOTOGRAPHY: © BILL TIMMERMAN

For the exterior, the architect chose an off-the-shelf industrial siding system for its durability and low maintenance. When viewed from the main road, the aluminum box shimmers in the sunlight (above).



1. *Field House*
2. *Existing buildings*
3. *Access road*
4. *Crop field*
5. *Tree line*
6. *Wetlands area*
7. *Apple orchard*
8. *Main road*

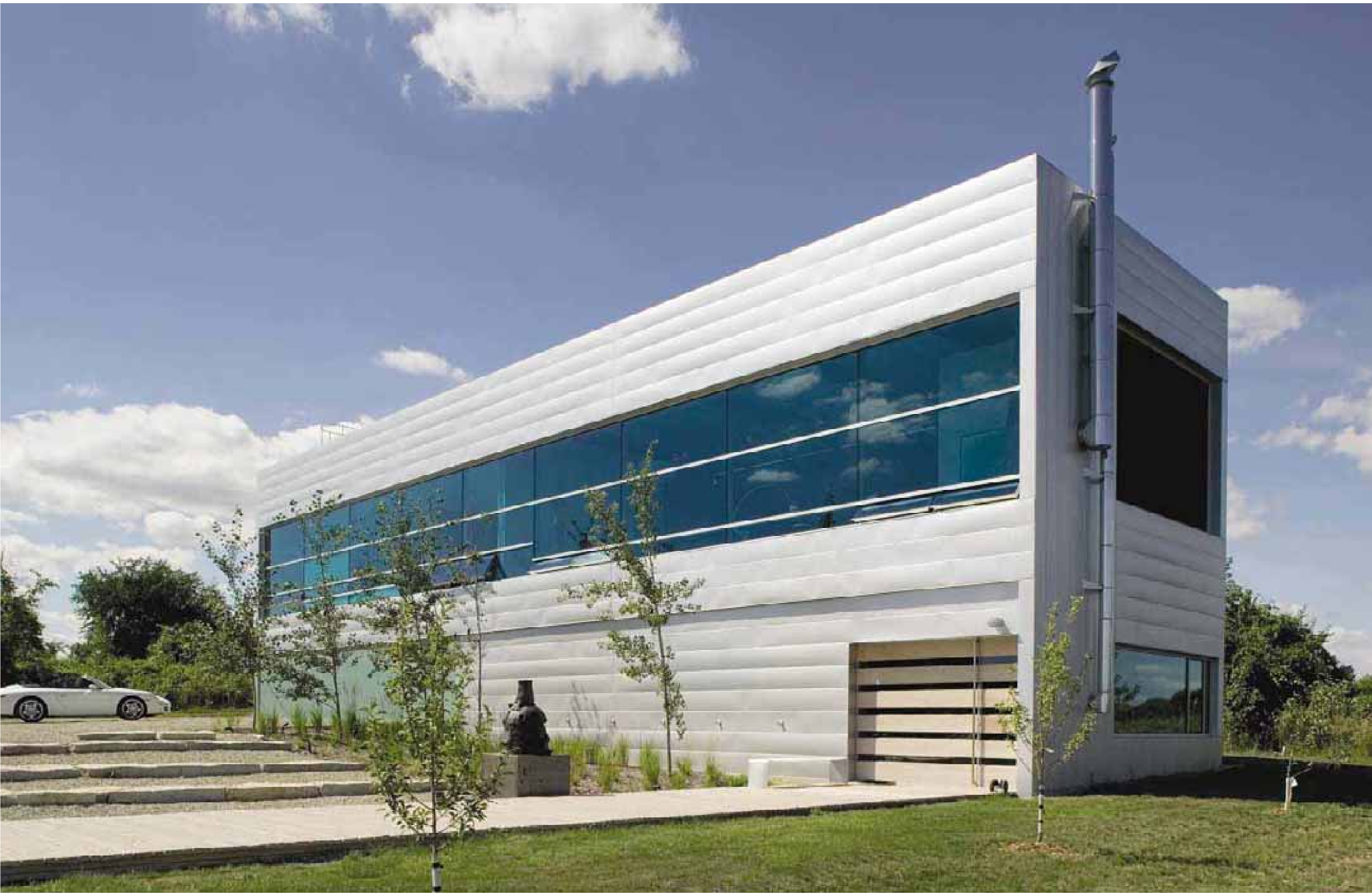


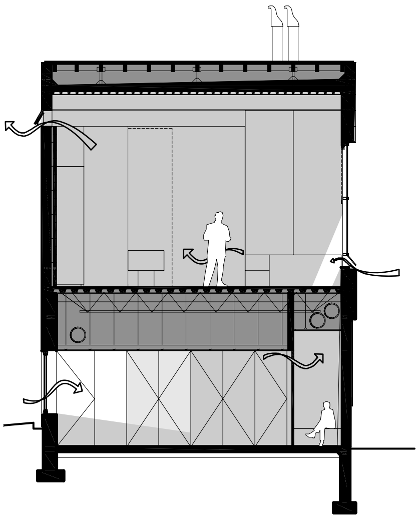
The front, or south, facade features bands of aluminum siding against an expansive panoramic window and a garage door of laminated glass (top). The house nestles into the northwest corner of a crop field (bottom).

metal cladding in parallel bands, reinforced by an aquamarine-tinted panoramic window that extends horizontally across this entire front elevation on the second floor. Geller says low clouds reflect so perfectly in this window that he sometimes feels as if he is driving into the sky when approaching from the access road. The banding continues at grade, where, at this elevation's west end, oversize sliding doors of laminated glass provide access to the garage and a pottery studio and where, at the main entrance to the east, a sliding plane of cedar panels continues the barn-door theme.

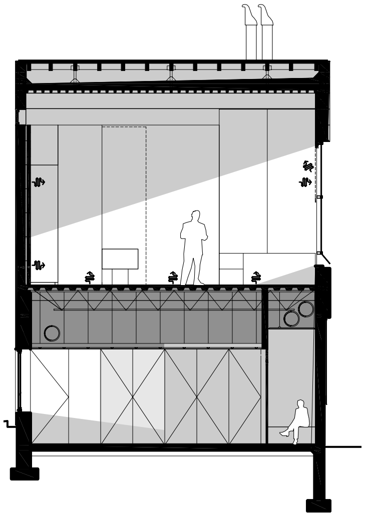
Inside, the long entry hall is dark and cavelike, its walls clad in raw steel, with doors that open inconspicuously to guest quarters, as well as laundry and media rooms, all at grade. Upstairs, in the living/dining/kitchen area, 16-foot-high ceilings, floor-to-ceiling glazing, and a loftlike open plan welcome abundant light and the imposing presence of the field outside.

Everywhere, but especially in the main living area, it becomes evident that the owner and architect have fused their visions to create a space where architectural details play counterpoint to the client's art and furniture collections. The interior's clean, simple lines and unadorned materials—black-stained, poured-in-placed concrete floors, black-walnut kitchen cabinets with stainless-steel countertops, exposed concrete block, and white interior walls—set the stage for the bright accents of Geller's colorful art objects. It's as if a New York City loft had found its way serendipitously onto





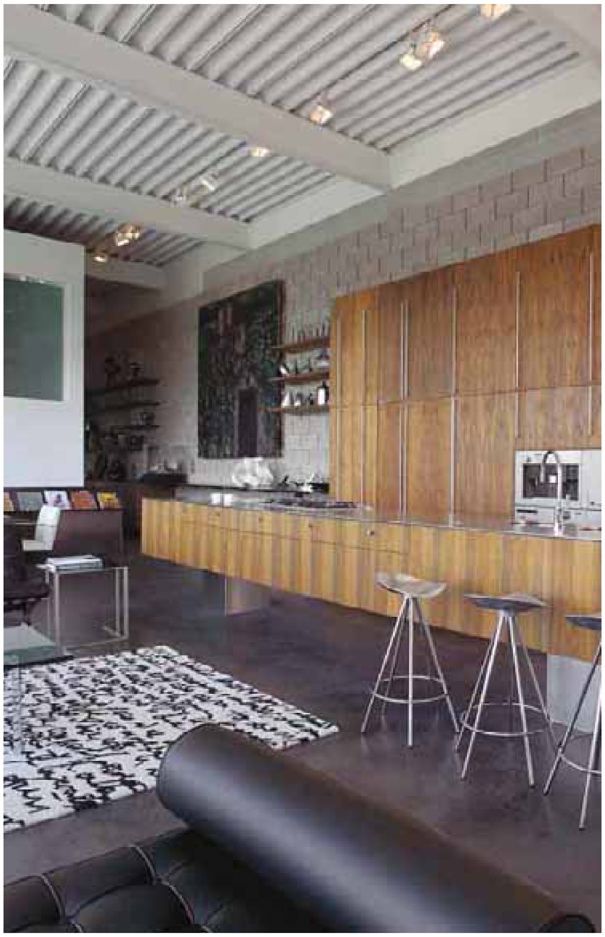
SUMMER: TRANSVERSE SECTION



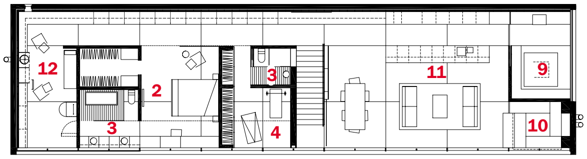
WINTER: TRANSVERSE SECTION

In warm weather, hot air exhausts through vents near the second-floor ceiling, and fresh air enters at grade (above left). In winter, the masonry absorbs the day's heat and radiates it to the interior at night (above right).

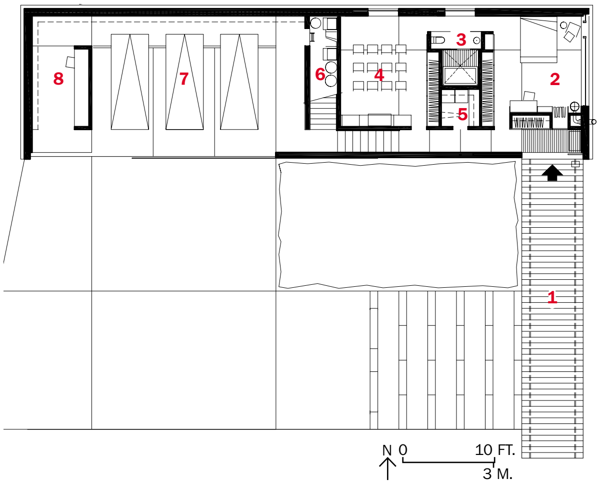
At the entrance, a bronze sculpture by Peter Voulkos, called *Big Ed*, greets the visitor (above). From the study, a silo ladder leads up to the rooftop's cedar deck (below right), which floats above the actual roofing, protecting it from moisture. A telescope on the deck offers access to the night sky. Chimneys with rotating cowls at the top vent the fireplaces (above at right and below left).



The stairway up to the second floor turns sharply right from the ground-floor entrance hallway (far left). The living/dining/kitchen area displays ceramics, abstract paintings, and a collection of tea services (near left).



UPPER FLOOR



LOWER FLOOR

1. *Front deck*
2. *Bedroom*
3. *Bath*
4. *Media room*
5. *Laundry*
6. *Mechanical*
7. *Garage*
8. *Pottery studio*
9. *Screened porch*
10. *Firepit*
11. *Living/dining/kitchen*
12. *Office*

this rural terrain, displaying sophistication within a self-effacing form. But the interior still references this landscape, especially the black floors, which the architect says he chose "to match the black earth of Wisconsin."

A corridor lined with walnut shelving for art, books, and artifacts runs along the back of the house, providing access to the exercise room, master suite, and study, all oriented to the front of the building. Glimpses through the doorways out to the fields punctuate this hall, further connecting the interiors with the landscape, both spatially and visually.

Outside, a protected wetlands area cuts through the field where, in warm weather, a stream flows lazily, indigenous wildflowers bloom, and pheasant, fox, deer, and opossum make a home. Here, between the wetlands and the house, the owner and architect found a place to plant an apple orchard. "It will, of course, mature over time," says Burnette, "creating an alley for the entry drive, effectively extending the house's threshold, so that the building and the field are revealed more slowly."

Field House's spare forms pay tribute to the farms, the sky, the prairie, and each season's distinctive mood. The rotating crops—corn, soy, or sometimes oats—sown by the farmer, retexture the land throughout the year. The evolving field defines and redefines the house, becoming the most important marker of change. ■

Sources

Exterior cladding: *Morin (Galvalume-Plus)*

Glass curtain wall: *Kawneer*

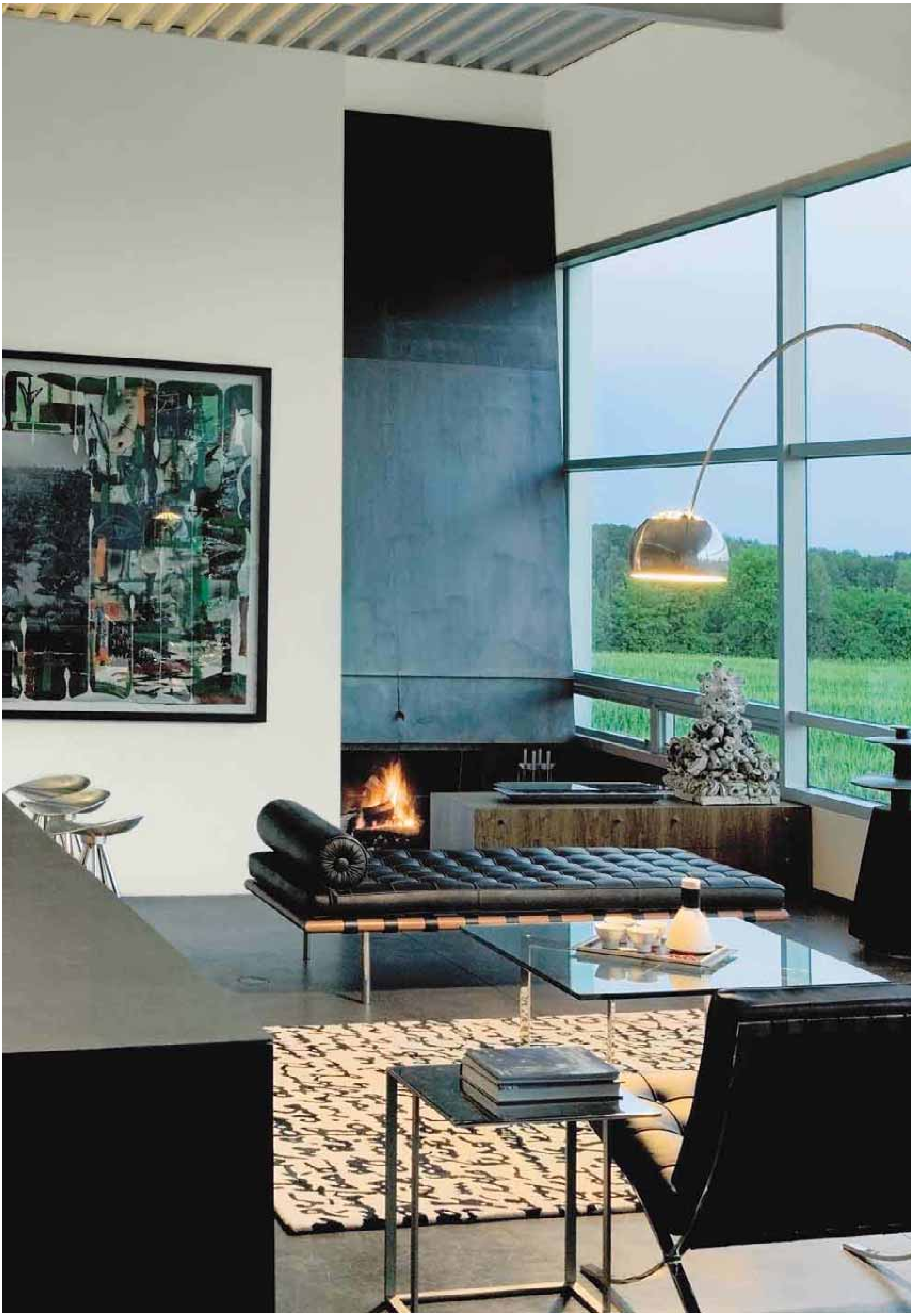
Aluminum windows: *Kawneer; ClearLine*

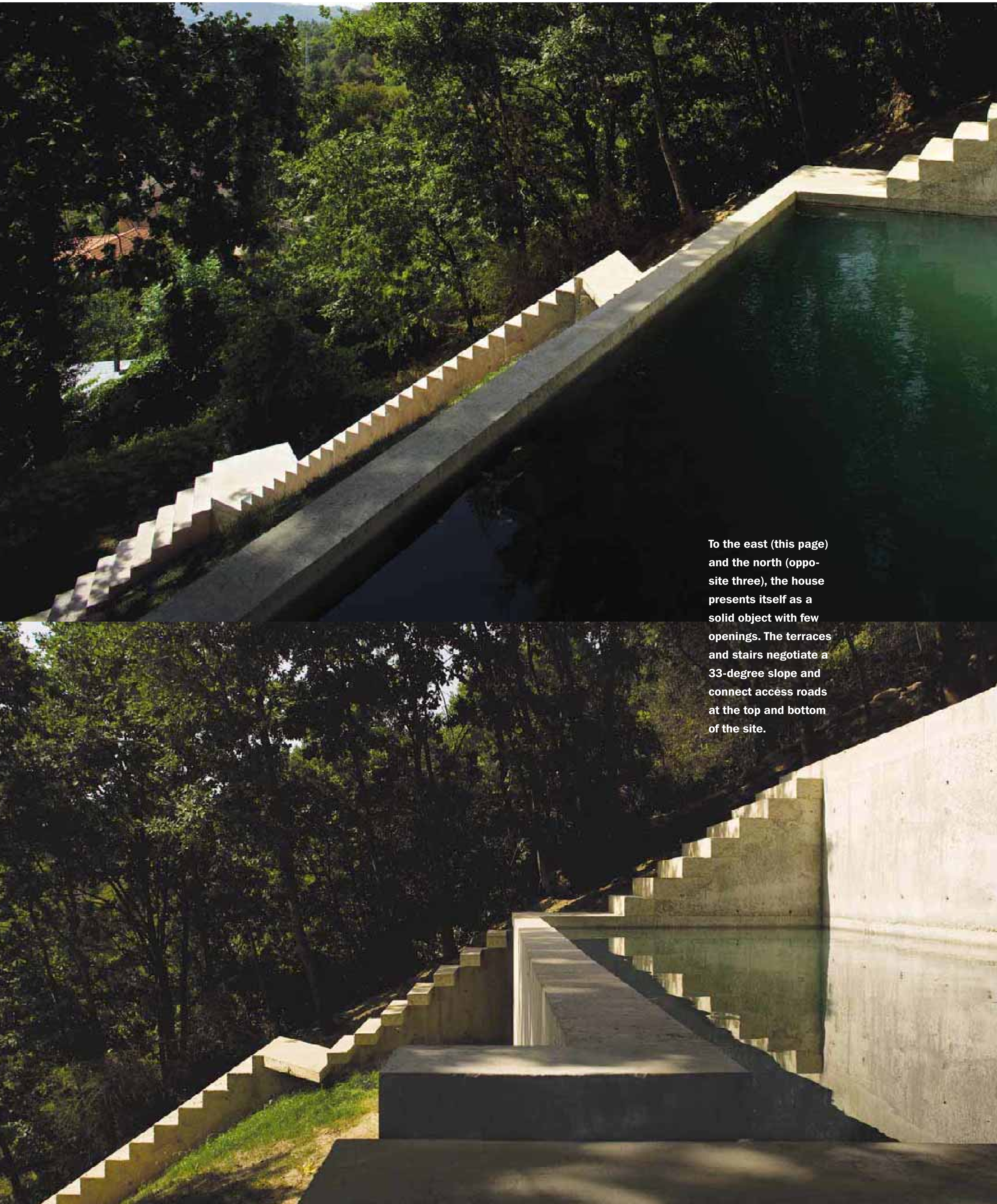
Wood doors: *Discher Architectural Woodwork/Miron Construction*

Sliding doors: *Omni Glass/Miron Construction*

For more information on this project, go to Projects at **www.archrecord.com**.

Low-lying Mies van der Rohe leather furniture defines the comfortable living area. Tucked into a corner of this room, a sunken space, with built-in seating on three sides and a hearth on the fourth, provides a place for intimate gatherings (right).

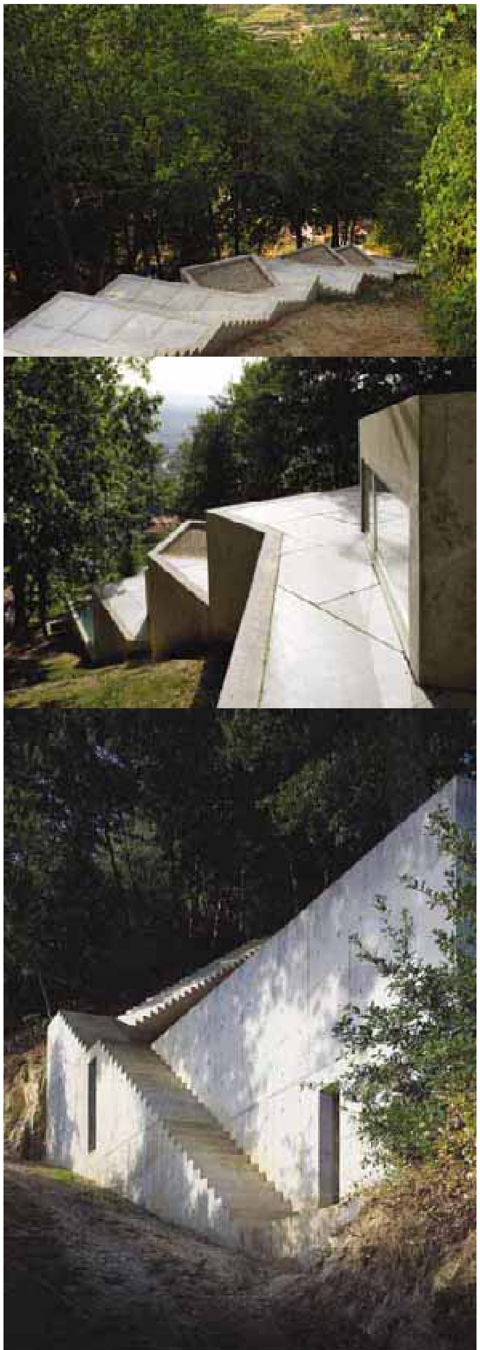




To the east (this page) and the north (opposite three), the house presents itself as a solid object with few openings. The terraces and stairs negotiate a 33-degree slope and connect access roads at the top and bottom of the site.

In northern Portugal, Alvaro Leite Siza Vieira cascades **CASA TOLO** down a steep slope through terraced gardens

By Clifford A. Pearson



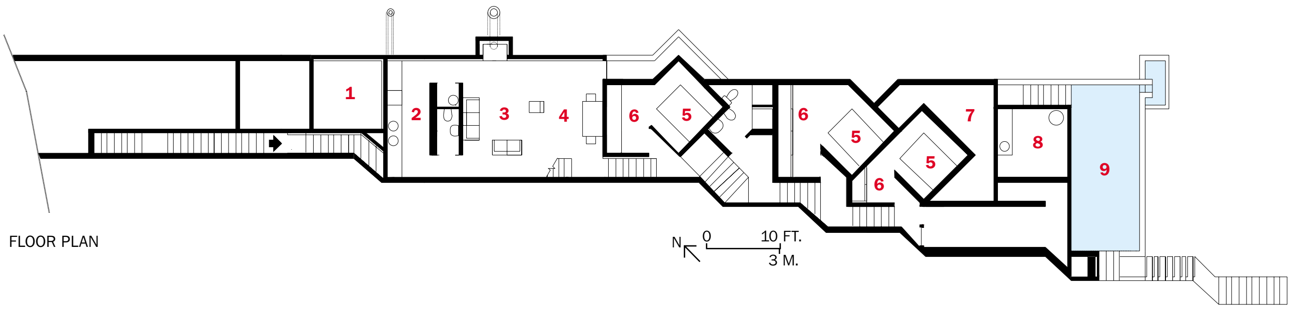
PHOTOGRAPHY: © FG+SG/FERNANDO GUERRA

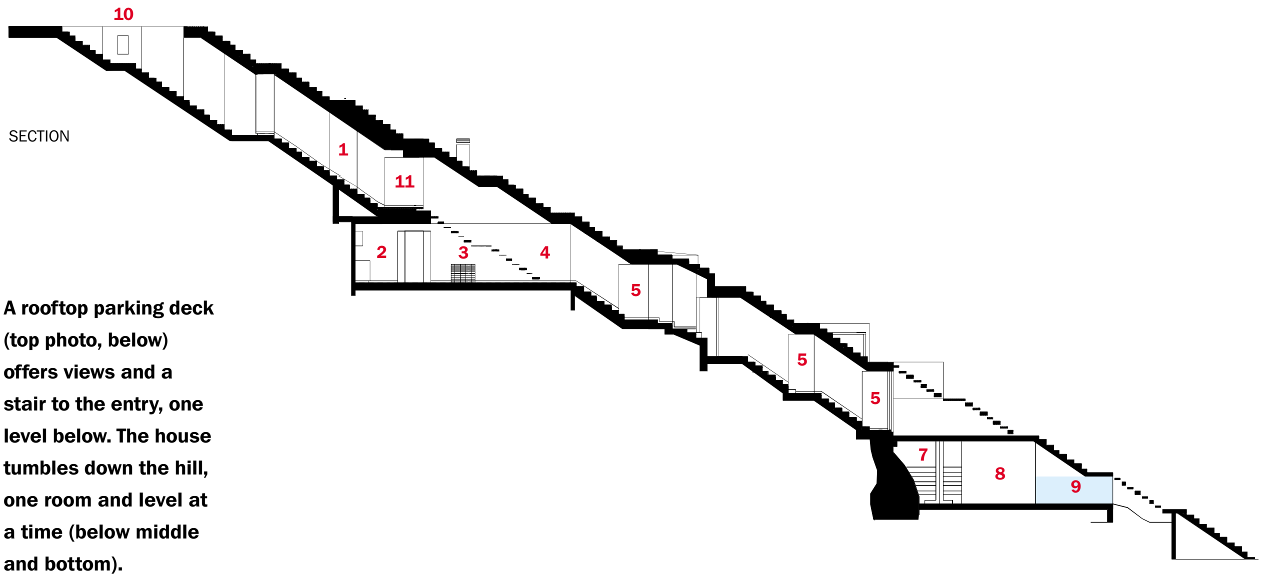
From certain vantage points, it looks like a relic from an ancient civilization, maybe an exposed portion of a stepped pyramid or some kind of Mayan monument. Partially buried in a steep hillside in the rural Vila Real district of northern Portugal, the Casa Tóló presents itself as a Jimmy Stewart kind of character: self-effacing at first, but then increasingly bold. Instead of a front facade, it offers merely a concrete deck, jutting out over the edge of a 33-degree slope with a view of mountains in the distance. To learn more, you must descend a set of stairs recessed in the deck, an act of faith since so little of the architecture has been revealed so far. As you move forward, you realize the house is a path, both literally and figuratively, taking you on a walk through the woods and unfolding in section as much as in plan.

Neither a Modern box nor a series of pavilions, Casa Tóló tumbles down the hill, a concrete cascade that seems more like pavement than domicile. Designed by Álvaro Leite Siza Vieira, son of the Pritzker Prize–winning architect from Porto, the house serves as the weekend retreat for the architect's cousin, his wife, and two children. With a difficult plot of land and a very tight budget (just $150,000 for construction and another $3,000 for landscaping), the client offered the architect little but constraints. Siza turned these limitations into assets by highlighting instead of hiding them. For example, the long, steep, ¼-acre site, he says, made a narrow, stepped plan "practically inevitable." But how many architects would take the concept of stairs so literally?

Siza, who set up his own small firm in 1992, shortly after graduating from architecture school, traveled in the United States that same year and again in 1997. "I saw a lot of Frank Lloyd Wright's buildings and some of Louis Kahn's," he recalls. "I loved the way both of them manipulated scale and light." Like some of the early Wright houses in Oak Park, Illinois, Casa Tóló lives bigger than its size—just 1,950 square feet. By establishing integral connections between indoors and out, and orchestrating daylight to animate interiors (instead of flooding them), Siza boosted the impact of this small house. He designed the roofs as a series of gardens, which turns these spaces into outdoor rooms. A swimming pool occupies the lowest terrace, while other levels offer areas for

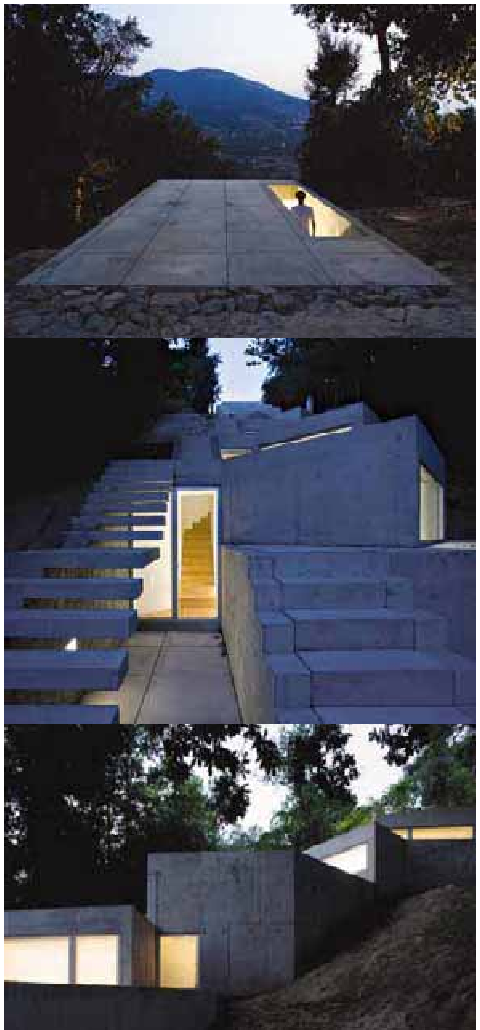
Project: *Casa Tóló, Lugar das Carvalhinhas, Alvite, Portugal*
Architect: *Álvaro Leite Siza Vieira Architect*
Engineer: *GOP/Gabinete de Organização e Projectos*
General contractor: *Oscar*





1. *Office*
2. *Kitchen*
3. *Living*
4. *Dining*
5. *Bedroom*
6. *Dressing*
7. *Laundry*
8. *Mechanical*
9. *Swimming pool*
10. *Parking*
11. *Entry hall*

A rooftop parking deck (top photo, below) offers views and a stair to the entry, one level below. The house tumbles down the hill, one room and level at a time (below middle and bottom).



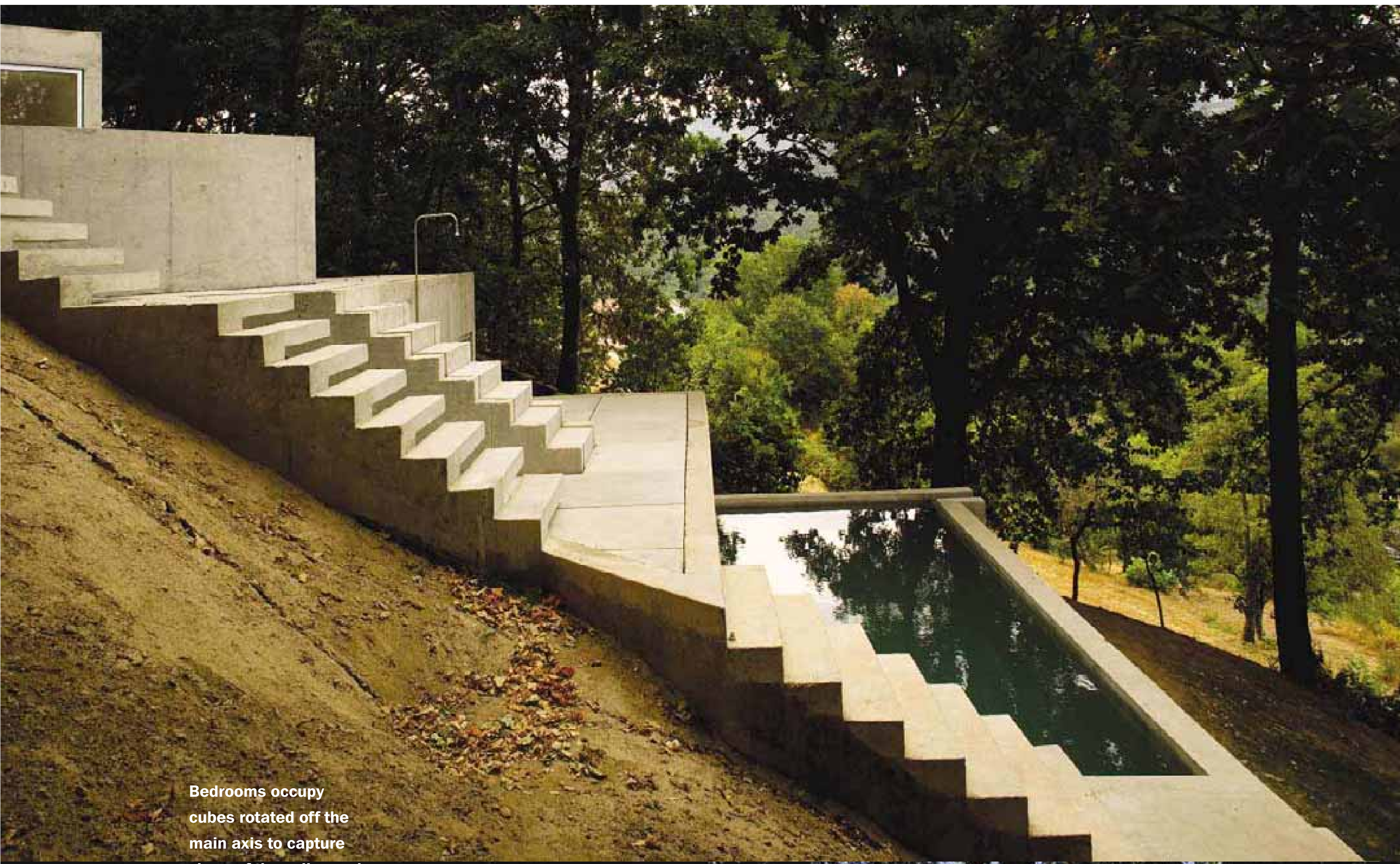
sitting, sunning, and even outdoor showering.

The architect pushed the house into the hillside to save money during construction and reduce expenses for heating and cooling later on. A simple, poured-concrete structure, it was easy to build. Precast-concrete pavers, each 3.3 feet square, clad the roofs, adding an extra layer of protection from the elements.

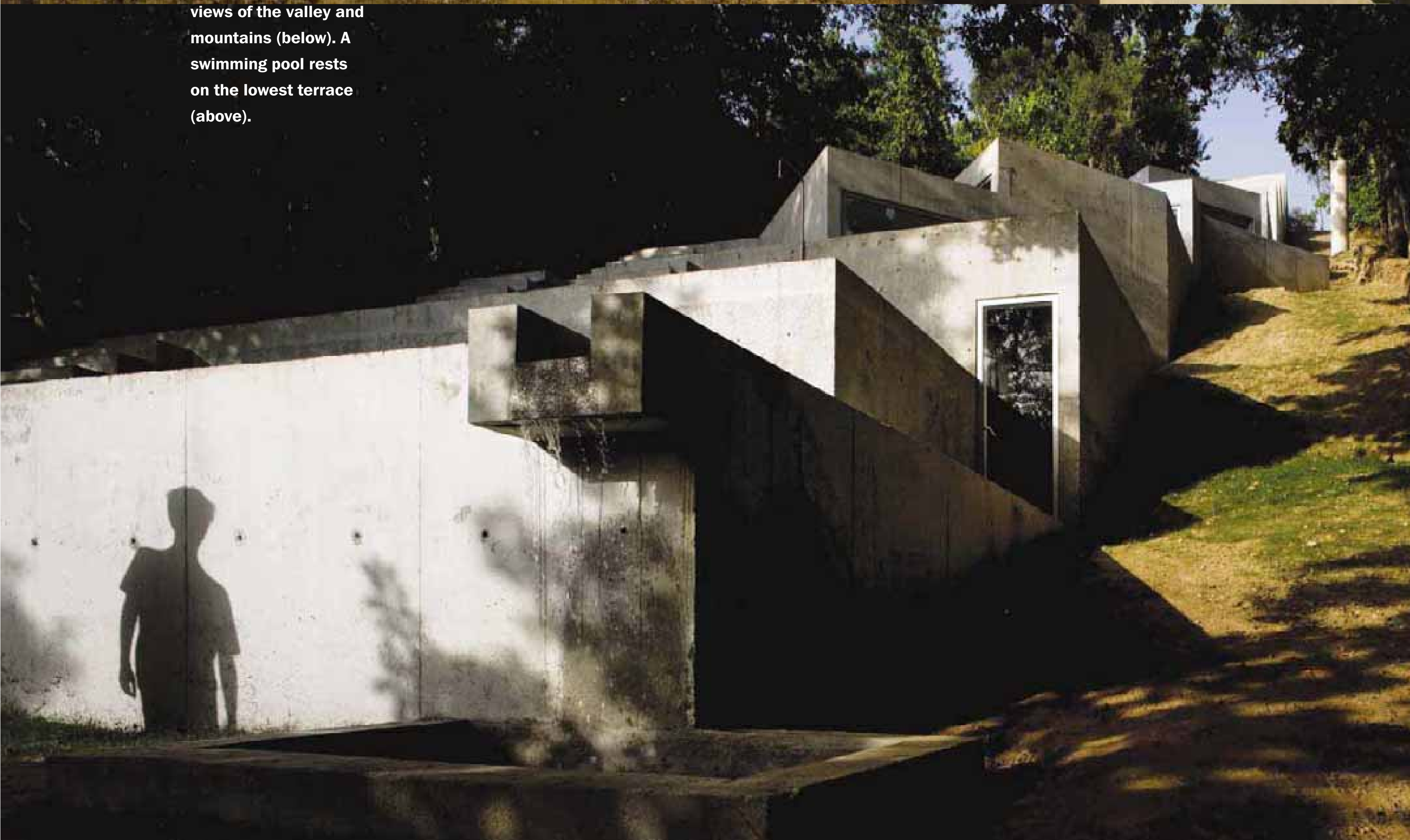
While it's immediately clear the house is all about stairs, you can't always see where they're headed. Most people arrive from the north, parking their cars on the house's uppermost roof. (A rustic footpath runs along the south edge of the site.) To get inside, you must descend the recessed stairs in the parking deck, going a full flight before arriving at the front door. Once inside, you encounter a long run of stairs, but later only fragments. "When I was young, I loved looking at drawings by Escher and Piranesi," recalls Siza. With Casa Tóló, he says, he wanted to make games of the stairs, creating ambiguity about what's going up and what's going down. Taking advantage of the sloped site, the architect placed each major function on its own level, starting with an office at the top, then dropping down to the living/dining/kitchen area, a bedroom, a second bedroom, a third bedroom, and finally a laundry and mechanical room. Each level enjoys its own outdoor space on the roof of the room below.

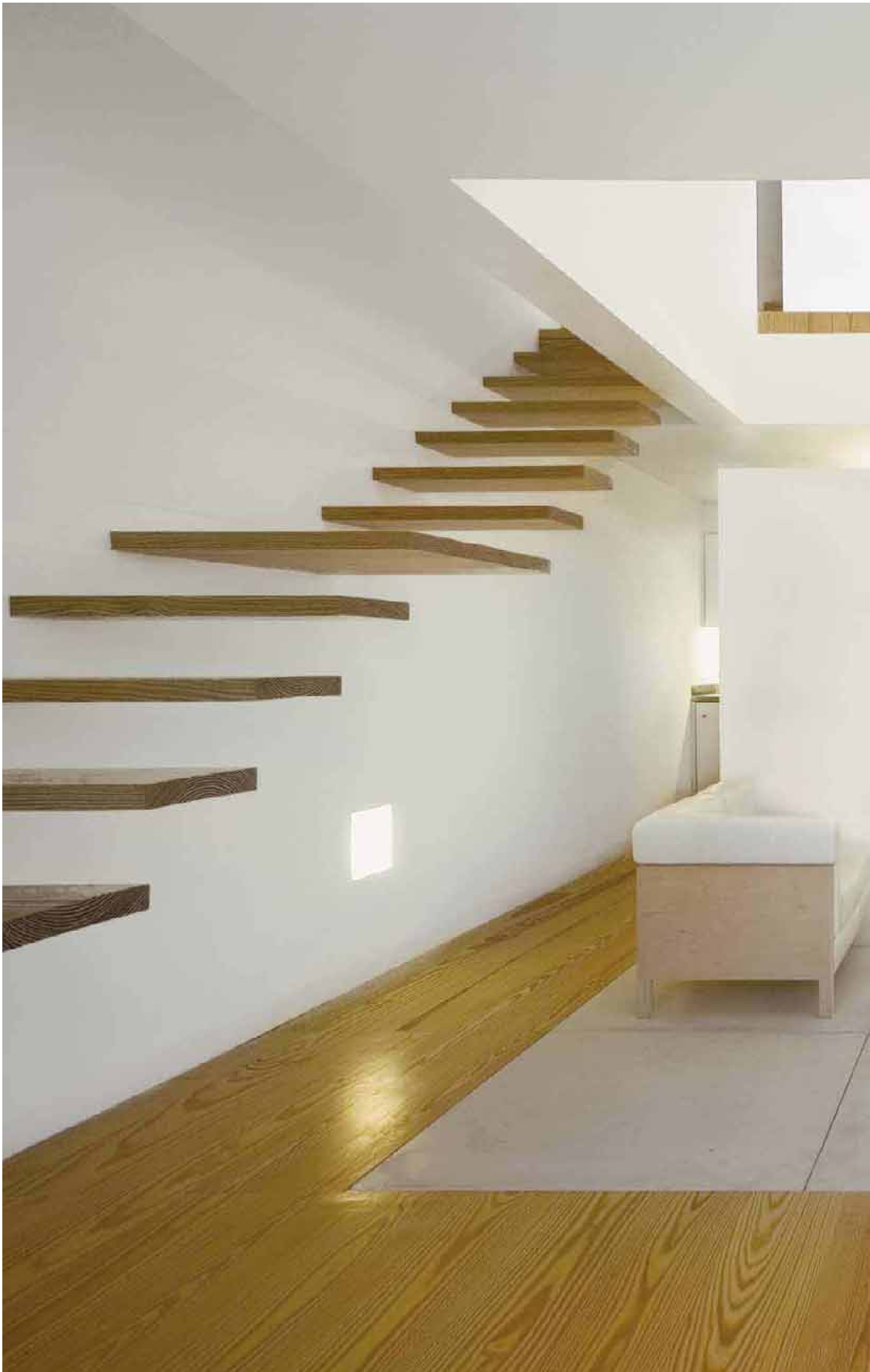
WHILE IT'S IMMEDIATELY CLEAR THE HOUSE IS ALL ABOUT STAIRS, YOU CAN'T ALWAYS SEE WHERE THEY'RE HEADED.

Siza's use of light reinforces his games with stairs. In the living room, he brings in daylight from a high transom whose source is obscure, giving the space a touch of mystery. In the bedrooms—three individual cubes turned 45 degrees from the main stair axis—his strategy is more

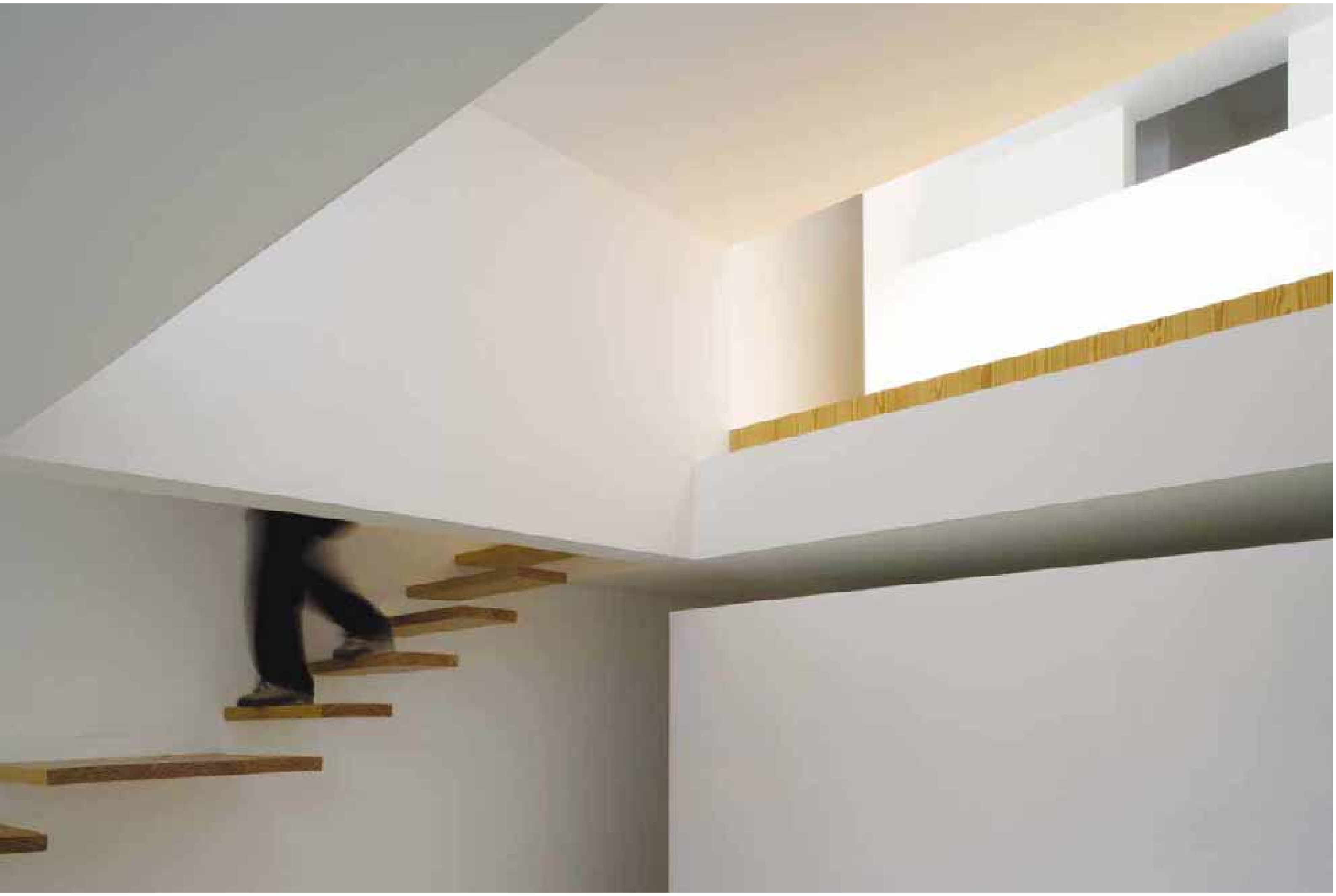


Bedrooms occupy cubes rotated off the main axis to capture views of the valley and mountains (below). A swimming pool rests on the lowest terrace (above).





In the living room, a large, north-facing transom window, bringing in suffused light, and a set of railless, wood stairs, cantilevered from one wall, give the space a floating quality. Siza designed the sofas himself to complement the house's simple materials and the other spare furnishings.



Inspired by the drawings of M.C. Escher and Giambattista Piranesi, Siza plays a visual game with the stairs, sometimes revealing long views of them (opposite), and other times obscuring where they lead (above and below), creating an aura of mystery.

direct: Provide large panes of glass oriented to views of the valley below and mountains beyond. The interior surfaces are of either white cement or lightly stained wood, a simple palette that was easy on the pocketbook and makes the house look bigger and brighter. During construction, his cousin was concerned that the house would be dark because it pushes into the slope without windows on the west and only one facing north. But, as the architect sees it, less was enough.

When asked if his father's architecture had an impact on his own, Siza says, "Everyone in Portugal is influenced by him. But I worked for him only one summer when I was a student and later only collaborated with him on a few projects. My work is autonomous from his."

With no front facade and a form that almost disappears into the hillside, Casa Tóló defies expectations. Though hardly ideal for the elderly or disabled, the house offers a lively sequence of spatial experiences created by the play of solids and voids, indoors and out. When described, it sounds preposterous, an intellectual conceit. But Álvaro Leite Siza Vieira has made a building of stairs work as a house—one that engages its site and actually lets people live on top of each other without getting in one another's way. ■

Sources

Elastomeric roofing: *Sotecnisol*

Aluminum windows: *Velfac*

Locksets and hinges: *Carvalho e Baptista*

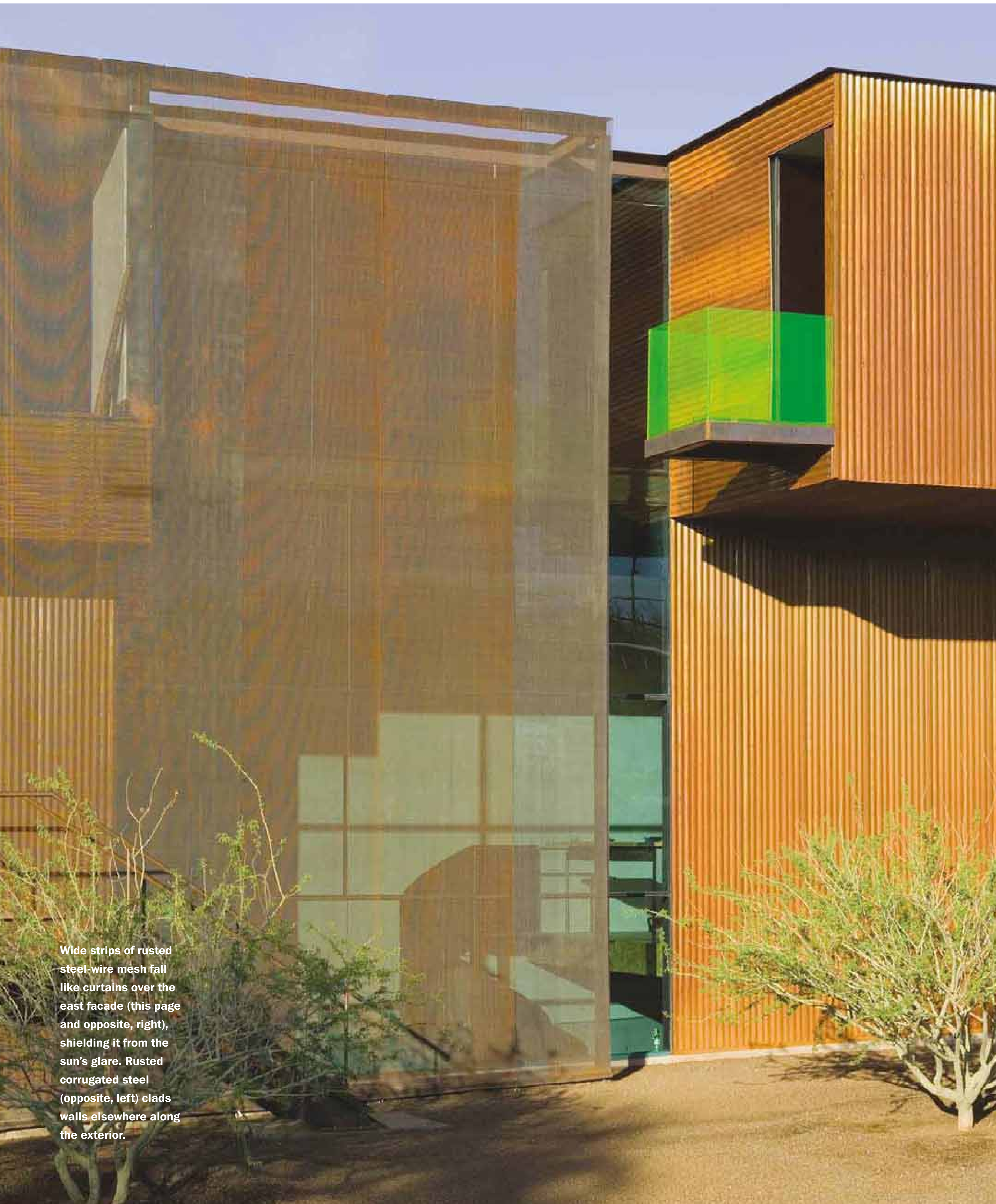
Pulls: *Designed by Álvaro Leite Siza Vieira for Carvalho e Baptista*

Sofas: *Custom by Álvaro Leite Siza Vieira*

Sinks and toilets: *Valadares*

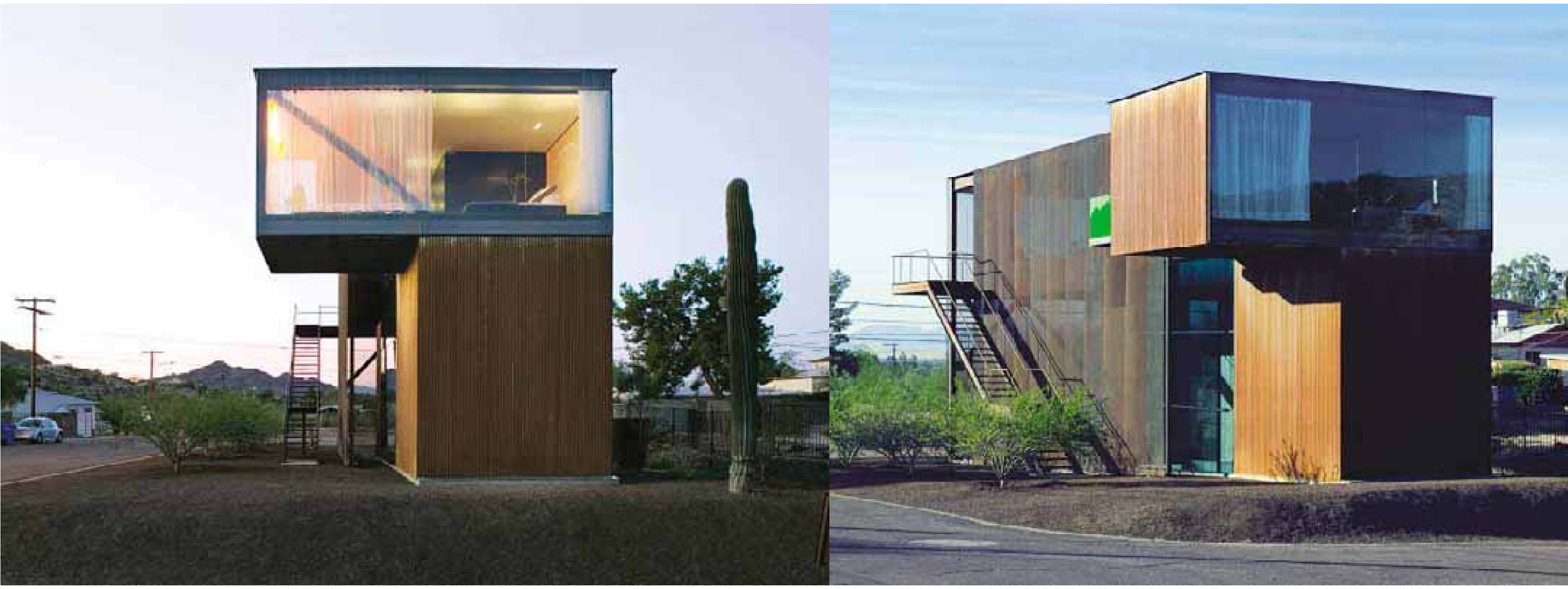
Refrigerator and kitchen appliances: *Siemens*

For more information on this project, go to Projects at **www.archrecord.com**.



Wide strips of rusted steel-wire mesh fall like curtains over the east facade (this page and opposite, right), shielding it from the sun's glare. Rusted corrugated steel (opposite, left) clads walls elsewhere along the exterior.

Wrapping **XEROS RESIDENCE** in a veil of rusted steel, **Blank Studio** borrows hues from the desert landscape



By Suzanne Stephens

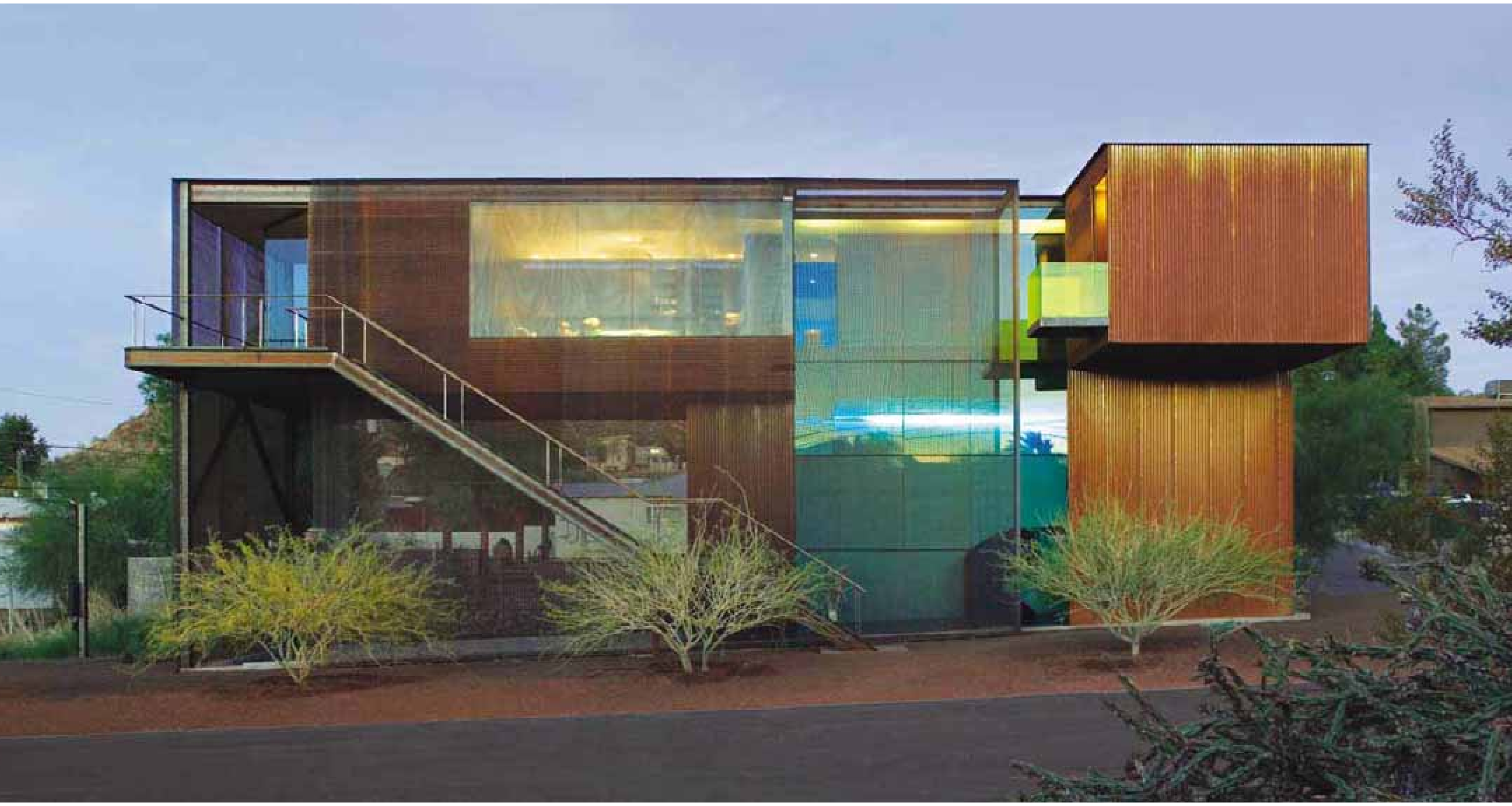
"I wanted to wrap one material around the entire house—as sort of an architectural lingerie," explains Matthew Trzebiatowski, AIA, about the rusted wire mesh and corrugated steel swathing the exterior of his Xeros Residence in Phoenix, Arizona. In designing—under the name Blank Studio—the one-bedroom, 2,200-square-foot home for his wife, Lisa, and himself, Trzebiatowski, an architect in the office of Wendell Burnette (page 92), seized on a lacy, if gritty, mesh to enclose open sitting areas and screen the glazed walls. Elsewhere along the exterior, sturdy corrugated-steel panels, oxidized to a ruddy hue, gird the structure. "The impulse was primarily aesthetic," Trzebiatowski says, noting, however, that the wire mesh both cuts the sun's glare and affords privacy, while the corrugated steel—with insulation—affords warmth when temperatures drop. Trzebiatowski also used steel for the structural frame. He considers a totally steel house a "kind of holistic notion that works well with the parched and rocky landscape. Most of my decisions are about being in this place," he says. Because of the desert climate, he named the house Xeros, the Greek word for dry. (Fortunately, the lack of moisture here has kept the rusting process from going too far.)

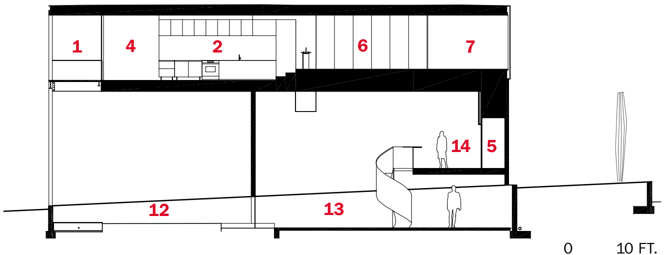
The neighborhood where the Trzebiatowskis found a rectangular, ⅛-acre corner lot (recently expanded to ¼ acre) lies on Phoenix's outskirts, where the city's flat, gridded streets come to a screeching halt at the foothills of the North Phoenix Mountain Preserve. The existing, unprepossessing, shoe-box-shaped house had to go: Like many in this catchment of undistinguished, one-story ranches and bungalows, it dated to the 1950s and needed extensive renovation. With musicians, architects, and artists moving into this precinct, it is not surprising that these newer, more bohemian neighbors didn't complain to the local design review board that the 30-foot-high, rusty-steel house would, without exceeding the zoning height limit, loom up over this enclave's stuccoed walls and tiled roofs.

From various angles, the Xeros Residence looks like a treehouse or a huge periscope—or both, combined. Within a narrow site, measuring only 50 by 250 feet, Trzebiatowski could not spread out horizontally, nor did he and his wife relish looking directly into the next-door neighbors' houses or yards. So on the upper level, he oriented the 30-by-16-foot living/dining/kitchen area to the south, toward the valley where the rest of

Project: *Xeros Residence, Phoenix*
Architect: *Blank Studio—Matthew G. Trzebiatowski, AIA, principal*
Owner: *Matthew and Lisa Trzebiatowski*
Engineers: *Brickey Design Associates (structural); Kunka Engineering (mechanical and plumbing), Tony Woo Engineering (electrical)*
Consultants: *Debra Burnette Landscape Design (landscape)*

PHOTOGRAPHY: © TIMMERMAN PHOTOGRAPHY

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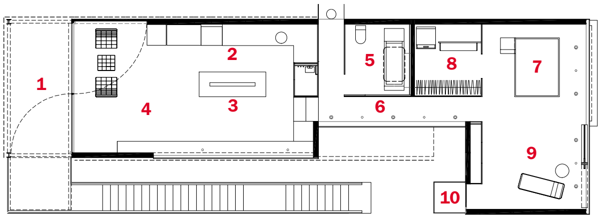
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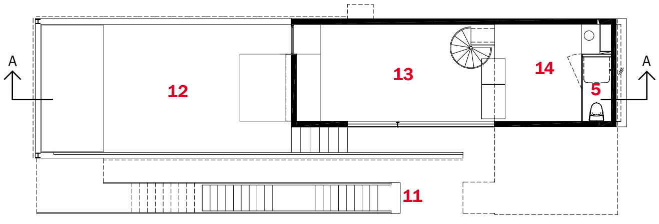
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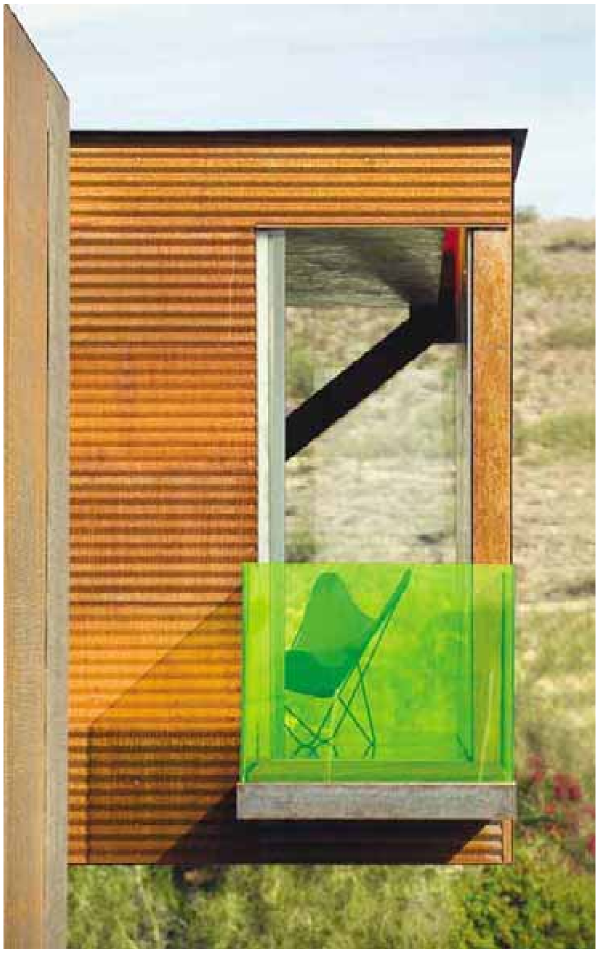
MEZZANINE LEVEL

On the east facade, behind Palo Brea trees, an exterior steel stair leads up to the main living quarters. Another run continues down to the studio and open patio, nestled slightly below grade. A yellow, laminated-glass balcony projects from the sleeping wing (right).

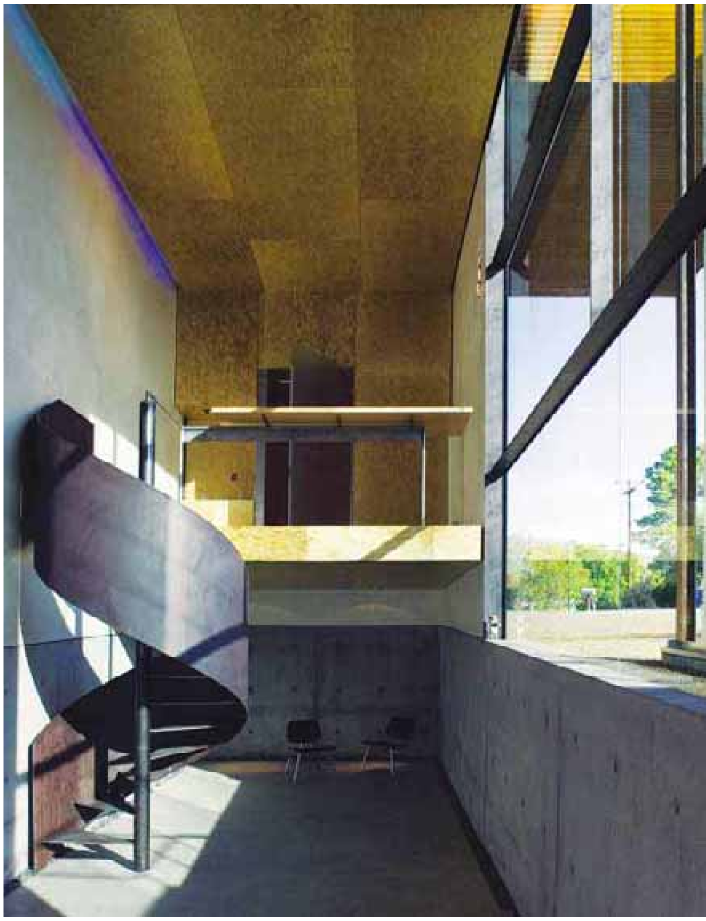
1. *Entry terrace*
2. *Kitchen*
3. *Dining*
4. *Sitting/living*
5. *Bathroom*
6. *Gallery*
7. *Sleeping*
8. *Storage closet*
9. *Media center*
10. *Balcony*
11. *Access to residence*
12. *Exterior courtyard*
13. *Studio*
14. *Library*

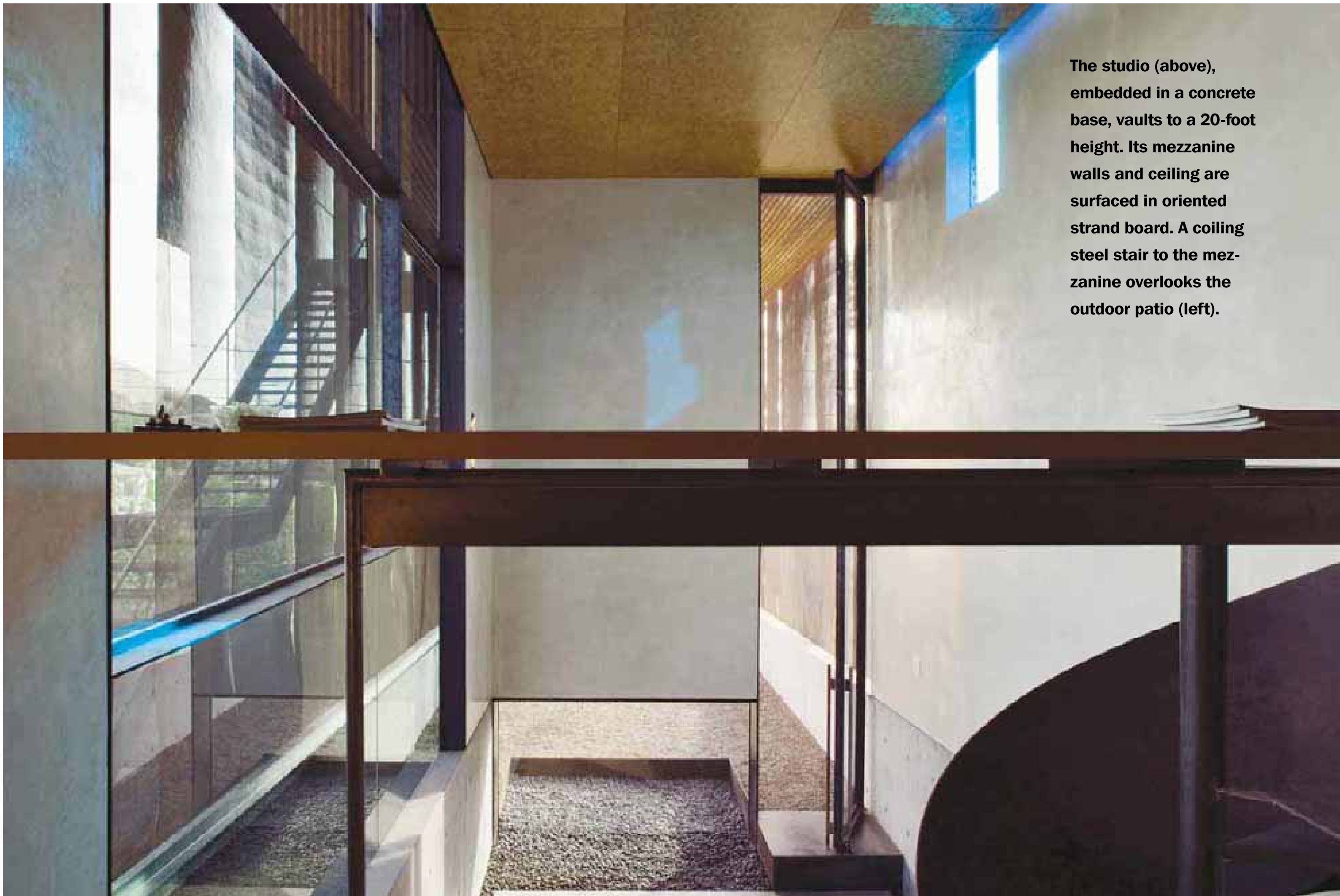


Phoenix sprawls, and the bedroom to the north, facing the unpopulated mountains. The 24-foot-long bedroom wing cantilevers 12 feet to the east from the house's 12-foot-wide base to include a home media center. The base, containing a library and studio, is partially enclosed by sloping concrete foundation walls, and depressed slightly below grade along the hill's 5-degree incline. To the south, the studio opens onto an enclosed outdoor patio and, beyond that, a 14-inch-deep pool.

With so much of the house in steel, the construction job sounds reasonably quick and easy. Nevertheless, five steel contractors were involved in executing everything from handrails for the open-riser entry stair, which snakes up the east exterior facade, to the structural frame. Some of the crew built four steel moment frames on-site, on the ground, then tilted them up and installed them in the poured-concrete foundations. Some workers filled out the structure with steel members, while others enclosed the perimeter walls with steel studs and 20-gauge corrugated-steel sheets. After that, they hung 4-foot-wide strips of woven wire mesh, used typically for sifting rocks on quarry conveyor belts, to shade the various glazed and open portions of the east, south, and west facades. As a final touch, they tied the strips together with wire. Within six months, the silvery raw steel had oxidized to the color of the earth.

But the house isn't all steel: The mezzanine, first floor, and roof are composed of a prefab TJI (wood-and-steel truss joist) system, and plum-chocolate-colored Latvian plywood surfaces the floor, cabinets, counters, and benches of the upper living quarters. Trzebiatowski sheathed the walls upstairs and downstairs in gypsum board, which he then plastered, and finally waxed for a smooth, luminescent white sheen.





The studio (above), embedded in a concrete base, vaults to a 20-foot height. Its mezzanine walls and ceiling are surfaced in oriented strand board. A coiling steel stair to the mezzanine overlooks the outdoor patio (left).

Flashes of color intermittently spark the rusty exterior, as in the bright yellow, laminated-glass balcony projecting from the master suite, or the blue, laminated-glass antechamber for the bathroom sink, which pops out of the west facade.

The interior's juxtapositions of lustrously brittle, white walls and the silky smooth, dark plywood planes bring to mind Mies van der Rohe's predilection for luxurious woods and marbles in his houses, although Trzebiatowski follows a more economic route. But if Mies's spirit seems to hover over certain finishes, or the prim lightness of a rectilinear plan, Le Corbusier lurks in some of the volumetric spatial effects. For example, the narrow, 20-foot-high studio, with a mezzanine at its north end, recalls the proportions of his Esprit Nouveau pavilion for the 1925 Exposition des Arts Décoratifs in Paris. A coiled stair to the studio mezzanine also belongs to Le Corbusier's signature *batterie de cuisine*, albeit rendered in steel rather than concrete.

Trzebiatowski is not alone in his penchant for rusting steel. Sometimes it seems the Sun Belt is gradually turning into an architectural "Rust Belt," as more and more young architects from Texas to California become enamored of the material's weathered tones and rough surfaces. But as Xeros Residence demonstrates, oxidized steel can not only elegantly and acerbically wrap a lean, rectilinear structure, but, through its rusty tinge on diaphanous and corrugated textures, it can also bring a fresh dimension to classic Modernist principles. ■

Latvian plywood surfaces the floor and walls in the sleeping and cooking quarters (top and above), as well as the kitchen benches. In the bedroom, a glass wall appears to slip past the floor deck and ceiling plane, while a light trough illuminates the end wall, made of gypsum board troweled with wax and plaster.

Sources

Lighting: *Lithonia (fluorescent in colored gel sleeves); Deltalight, Erco (downlights); Nightscaping (exterior)*

Plumbing fixtures: *Duravit (tub, toilet); Kohler (bathroom sink, shower)*

Appliances: *True (refrigerator); Jen-Aire (dishwasher, stove/oven)*

For more information on this project, go to Projects at **www.archrecord.com**.

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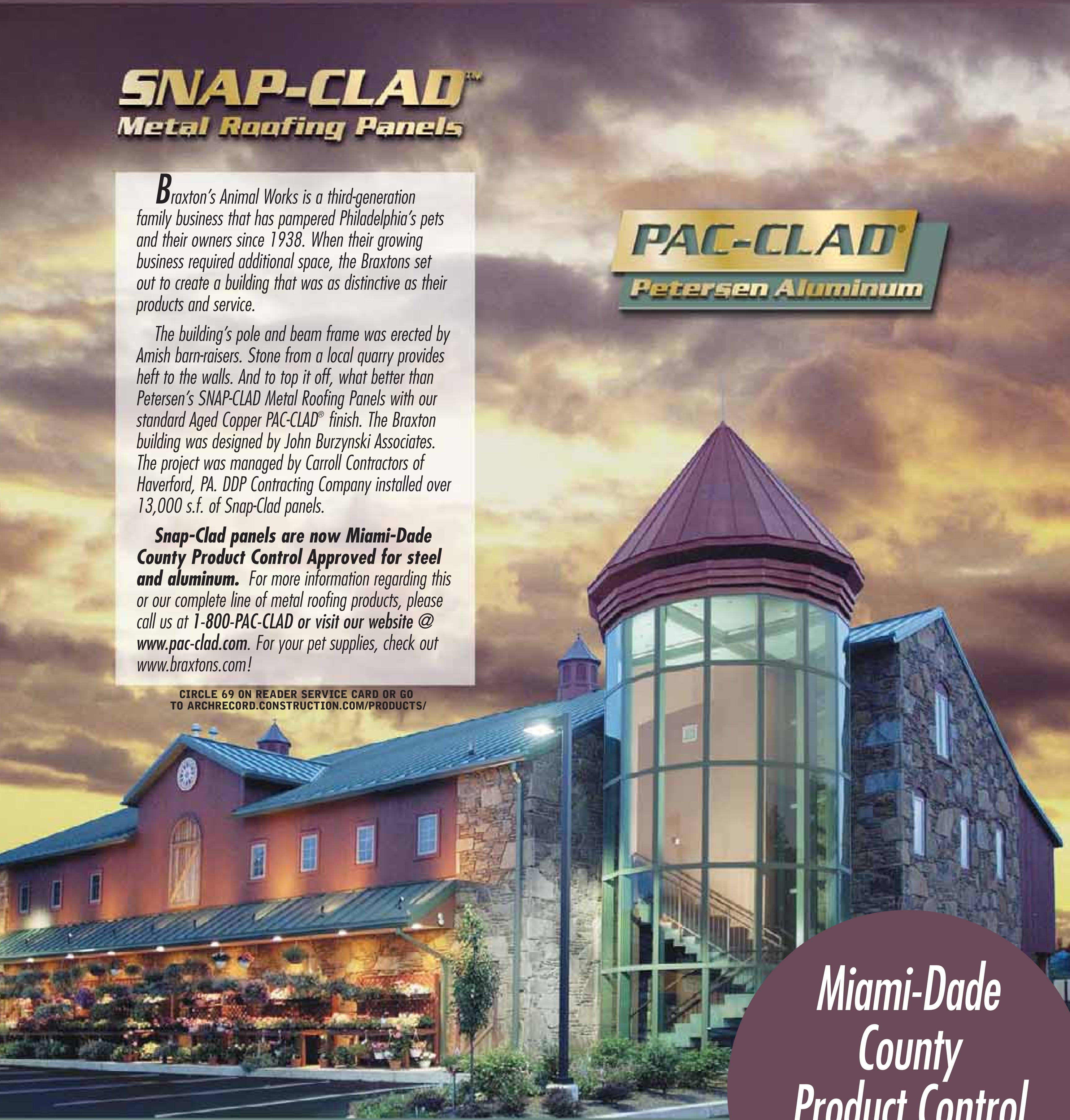

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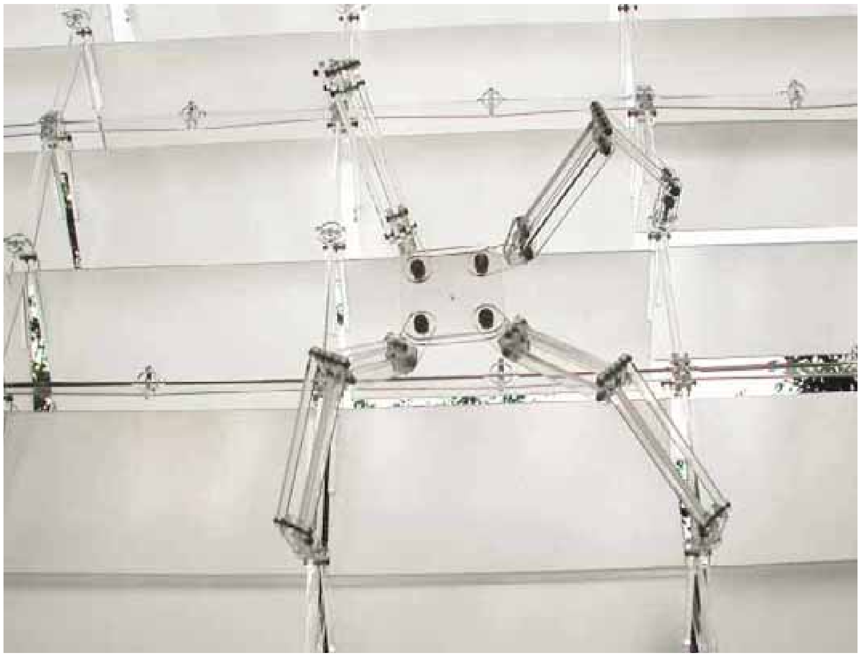
By C.C. Sullivan



"Edge monkeys" are robots that would close windows, check thermostats, adjust blinds, and "gesture meaningfully to internal occupants" when they are clearly wasting energy.

PHOTOGRAPHY: COURTESY STEPHEN GAGE AND WILL THORNE

In an article published in the cyber journal *Technoetic Arts* last year, British architect-academics Stephen A. Gage and Will Thorne describe a hypothetical fleet of small robots they call "edge monkeys." Their function would be to patrol building facades, regulating energy usage and indoor conditions. Basic duties include closing unattended windows, checking thermostats, and adjusting blinds. But the machines would also "gesture meaningfully to internal occupants" when building users "are clearly wasting energy," and they are described as "intrinsically delightful and funny." The authors liken the relationship between edge monkey and human to that of P.G. Wodehouse's Jeeves and Wooster characters. "Jeeves's aim is always to modify Wooster's behavior so that it is more sensible," they write. "And we need all the persuasion we can get to modify our behavior before the planet is severely compromised."

Practicalities of microrobotics aside, this sci-fi-sounding scheme crystallizes the widespread concern informing many recent architectural projects. Increasingly, architects would like to automate their building envelopes rather than leave energy-efficient operation to chance (or harried maintenance engineers). As a result, the critical interface between the interior and the elements is getting more attention—and more animated.

C.C. Sullivan is a consultant and author who specializes in architecture and technology. He is currently writing a book on interactive building envelopes.

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ *AIA Continuing Education article. To receive credit, turn to page 156 and follow the instructions. Another opportunity to receive Continuing Education credits in this issue can be found in the sponsored section beginning on page 163.*

LEARNING OBJECTIVES

After reading this article, you should be able to:

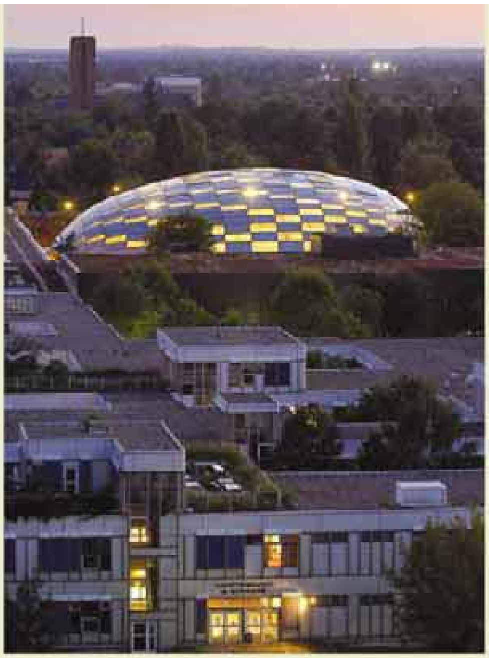
1. *Describe interactive building envelopes.*
2. *Explain the current interest in active building skins.*
3. *Identify the application most responsible for interactive building support.*

For this story and more continuing education, as well as links to sources, white papers, and products, go to **www.archrecord.com**.

Thanks largely to innovators from Europe, buildings are wearing more smarts and moving parts. The lion's share use double-skin construction as well, in which inner and outer glass walls are separated by a ventilated cavity that often contains solar shading. Hundreds of double-glass or interactive envelopes appeared in Germany and Austria in the 1990s. In the United States, such projects are novelties, despite the existence here of an early example that debuted during the early 1980s oil crisis: Cannon's Occidental Chemical Center in Buffalo, New York, introduced a double-wall facade containing automated operable louvers.

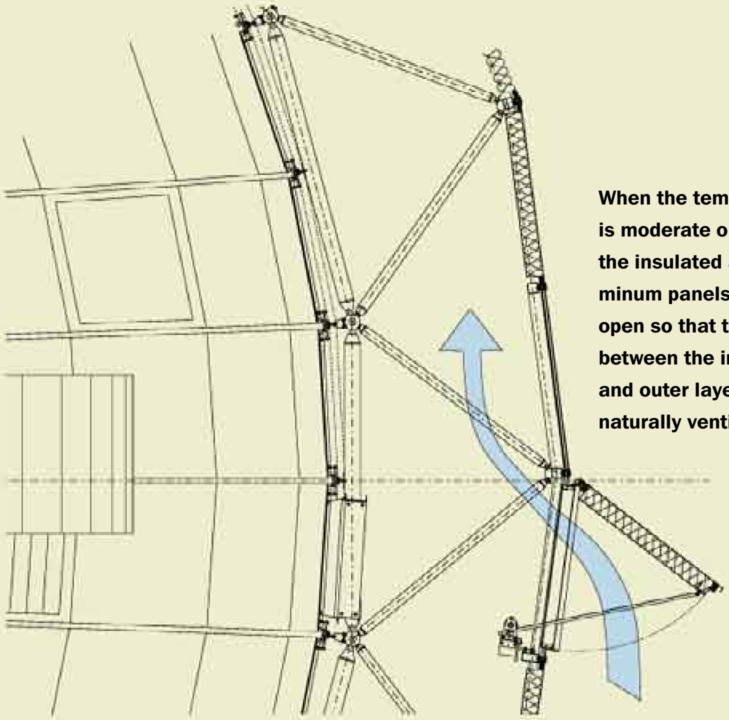
Back then, the idea was an anomaly. Today, activating the skin is in vogue, note critics and proponents alike. From the "robotecture" labs at top architecture schools to interactive art installations like James Carpenter's *Podium Light Wall* for New York's 7 World Trade Center, aesthetics and technology are converging in unlikely places. Nonetheless, the mainstream drivers for interactive envelopes are sustainability and stringent energy codes. Another is heightened interest in "Wooster"—the end user. "The costs can't be justified strictly on the basis of energy savings," points out Eleanor S. Lee, a scientist and architect in the Building Technologies Program at Lawrence Berkeley National Laboratory (LBNL), Berkeley, California. "But these systems will be used increasingly for occupant satisfaction, including thermal comfort, acoustical performance, and access to fresh air."

While fashionable and possibly advantageous, the adoption of high-tech envelopes has been slow. Skeptical architects worry that operable components are magnets for value-engineering. Or they foresee them being unplugged and later stripped off their buildings due to poor



Free University Berlin

This building has an outer layer of windows and aluminum panels, and an inner layer of fiberglass fabric. In winter, warm air between the layers rises to the top, then is drawn down through the building to provide heat.



When the temperature is moderate outside, the insulated aluminum panels swing open so that the space between the inner and outer layers is naturally ventilated.

SECTION DETAIL

performance or deficient maintenance. Other firms cite client interests, noting such high-profile failures as the broken actuators on the sun-control diaphragms cladding Jean Nouvel's 1988 Institute du Monde Arabe in Paris. "Culturally, we have little confidence in what we're doing, and in systems integration for these hybrids," says Volker Hartkopf, director of the Center for Building Performance and Diagnostics at Carnegie Mellon University, Pittsburgh. "Yes, these things can break, but so can fans, dampers, thermostats, and so many other things we take for granted."

"I think such worries are well-founded," counters Bruce Nichols, a principal of the New York City–based facade consultancy Front Inc. "While an automobile maker is a single source of responsibility, that doesn't happen in architecture." He recounts his work with the Japanese firm SANAA on a competition-winning office building for the Novartis campus in Basel, Switzerland. For its transparent triple glazing with integral automated ventilation and Venetian blinds, the shades came with only five-year warranties; the glass was guaranteed for at least 10 years. So, if a shade fails after five years, Novartis would have to pay for replacing a glass unit just to access the defective shade. "We asked the manufacturers if they could get their act together to offer a collective warranty," Nichols recalls. "They couldn't."

Beyond famous failures, high installed costs, and mismatched warranties lay big coordination challenges, adds Nichols, and conflicting liabilities among project team members. Plainly, the road to the interactive envelope is a rough one. But at the end of the ride, optimal energy performance is the payoff, right? So it is hoped. Yet Lee warns there is shockingly little postoccupancy data to confirm initial design claims on older projects.

TWO THIRDS OF COMMERCIAL BUILDING COOLING LOADS COME FROM LIGHTING SYSTEMS AND SUN-LOADED GLASS SURFACES.

Sun-tracking systems lead the way

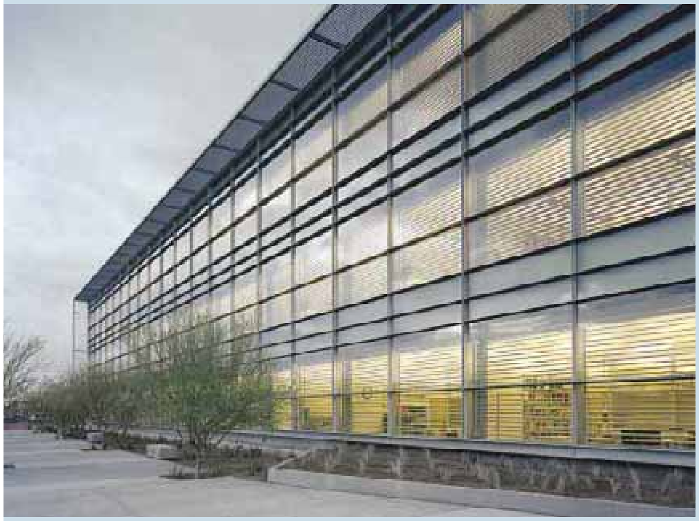
While animated as much by polemics as by actuators, new interactive envelopes still have fervent supporters. A single, conventional application gets most of the credit for the good buzz: daylighting control. On its own, an operable shade or louver is easy for an architect to analyze, especially with new daylight analysis tools built into common CAD platforms. The overarching driver for most automated shading is the typical energy profile of large commercial buildings, according to LBNL. Cooling loads dominate, with more than two thirds needed simply to counteract heat gain from lighting systems and sun-loaded glass surfaces.

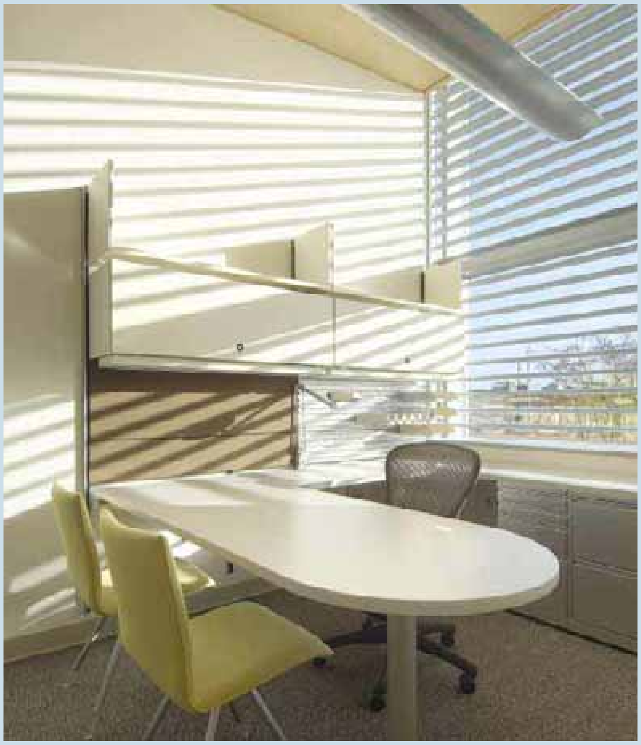
Also encouraging the use of interactive envelopes is the solid performance of photosensors, dimmable lighting controls, and novel solar-tracking devices. More recent advances include switchable glazings, sometimes called "smart windows." These automatically tint or frost, activated by either an applied voltage (electrochromic) or a small release of gas, such as hydrogen (gasochromic). The former type is more widely available, but both can reduce combined cooling and lighting loads by up to 5 watts per square foot in interior perimeters.

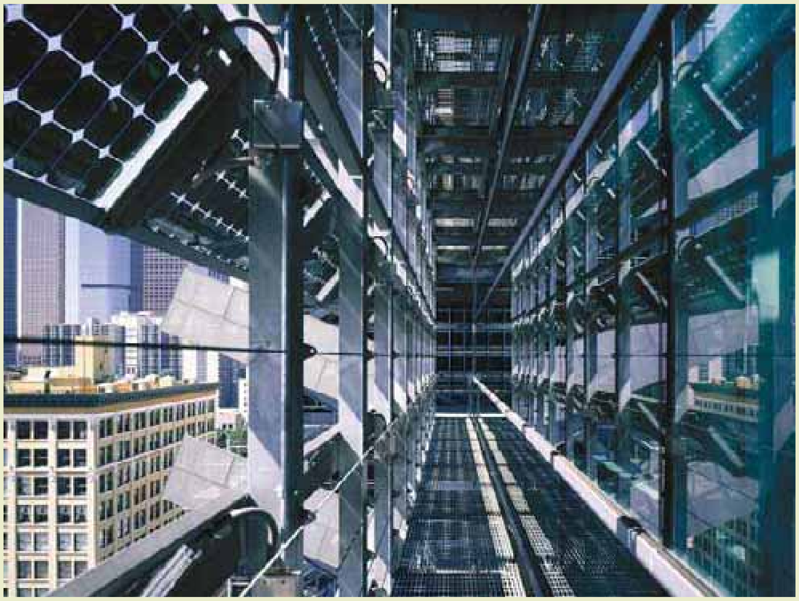
Another appeal of automated shading relates to the feasibility of the highly transparent, relatively unarticulated building enclosures currently in fashion. For Arizona State University's Biodesign Institute in Tempe, collaborators at Gould Evans and Lord Aeck Sargent Architecture compensated for a large easterly expanse of window walls by using interior aluminum louvers controlled continuously by photocells and sun-tracking software. A manual override accessible through occupants' computers allows personal adjustments to be made.

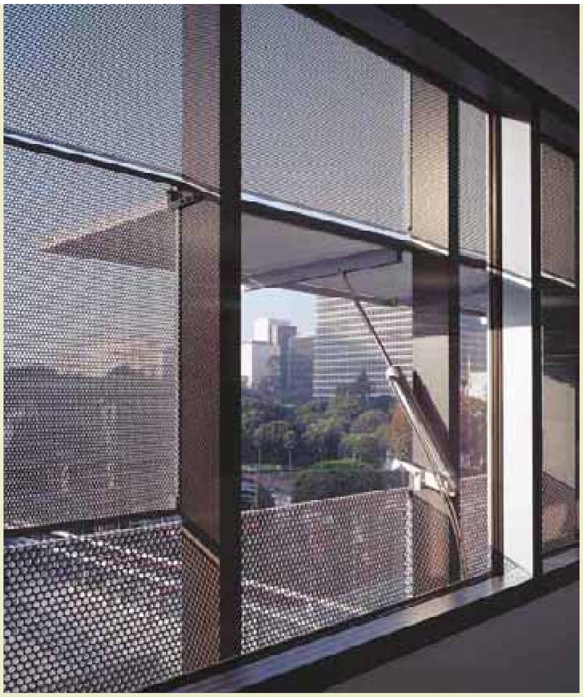
PHOTOGRAPHY: © RALPH RICHTER/ARCHITEKTURPHOTO (OPPOSITE THREE); TIMOTHY HURSLEY (THIS PAGE, MIDDLE); MARK BOISCLAIR (THIS PAGE, TOP AND BOTTOM)

Biodesign Institute, Arizona State University, Tempe
A large, easterly expanse of windows uses aluminum louvers that are controlled continuously by photocells and sun-tracking software. The design allows occupants to control most of the louvers in their offices using their PCs, although at above 8 feet from floor level the louvers are controlled automatically.









Caltrans District 7 Headquarters, Los Angeles

Different elevations of the building have different systems. On the south side (above), large photovoltaic panels form a brise-soleil. On the east and west facades, perforated solar-shading screens hang a foot from the exterior wall. When they heat, air around them rises, which draws cooler air from ground level. Each day, about 1,000 screens (above right), which are located in front of windows, open and close.

PHOTOGRAPHY: © ROLAND HALBE

Is intelligent shading worth the bother? LBNL tests suggest so. Automated daylight setups coupled with dimmable and switchable electrical lighting beat conventional fixed blinds in terms of energy draw by about a third in winter and up to 52 percent in summer. Measured daylighting levels are comparable to those for unshaded bronze glazing, with only half the solar heat gain. Lee adds that the systems allow building managers to voluntarily curtail electrical loads as part of utility demand-response programs, which help avert blackouts.

Active doubles, anyone?

Harder to predict are the benefits of hybrid envelope systems, in which two or more interactive strategies are combined. Many European architects have integrated ventilation, shading, and other active technologies into double-wall facades that serve as primary space conditioners. Unlike Cannon's Occidental Chemical building, early double envelopes had few moving parts. (Some Europeans use the term "active facade" to describe any ventilated double wall, regardless of operability.) More recent projects feature more "edge monkeys": automated hoppers, vents, and shades.

An extreme example is the philology library by Foster and Partners at Berlin's Free University, completed last year. The four-story, orblike enclosure—with an underfloor air plenum—is engineered for free cooling for about seven months of the year using natural ventilation. A checkerboard cladding of aluminum and glazed panels protects an inner glass-fiber membrane. Operable panels close during cold weather, and fresh air is drawn from outside through the floor cavity and into the envelope void. A concrete internal structure provides thermal mass and radiant cooling and heating of recirculated air. The client expects about 35 percent energy savings over a comparable facility.

Hopefully, performance data will bear this out. But unlike Foster's 1997 energy-miser Commerzbank Tower in Frankfurt, most large-scale projects don't document utility costs. Karl Gertis, a building physics researcher at the University of Stuttgart, thinks it's because they often miss the target. In the design phase, simulations prove notoriously unpredictable, he believes. Once built, natural ventilation often isn't adequate for room air handling or for maintaining comfortable temperatures. Weak convective airflows in wall cavities may preclude the use of insect screens and air filters, too. Last, Gertis cites numerous buildings designed without mechanical cooling that have failed. Foster's library stands prepared: On hot days, it leeches supplemental cooling from an adjacent structure.

For Plantation Place, a large office development in London, Arup Associates incorporated active solar shading and occupant-controlled operable ventilation in its double-skinned cladding design. At their lower levels, the buildings have a heavy curtain of limestone fins in deference to the masonry expression of the project's Neoclassical neigh-

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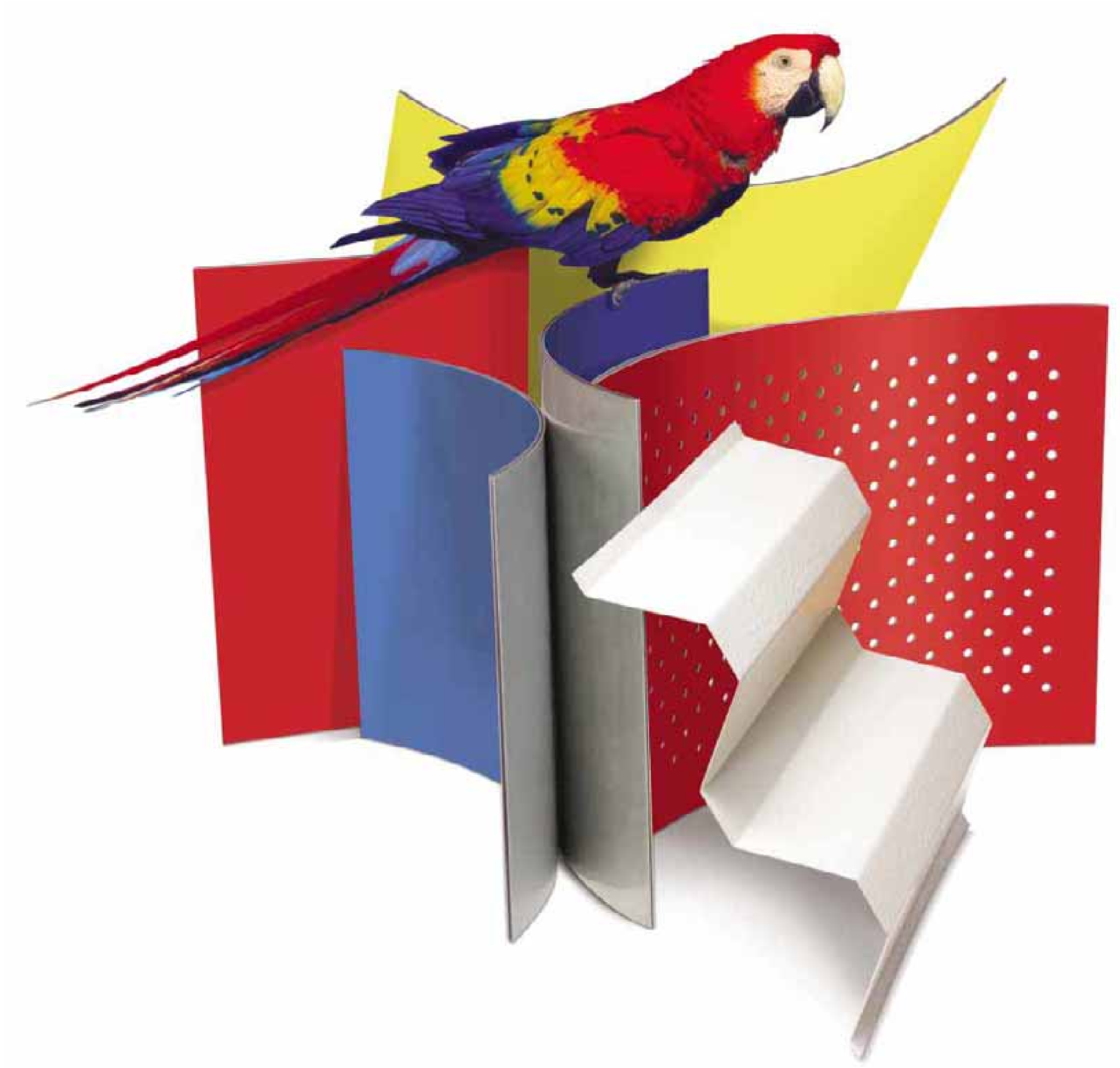

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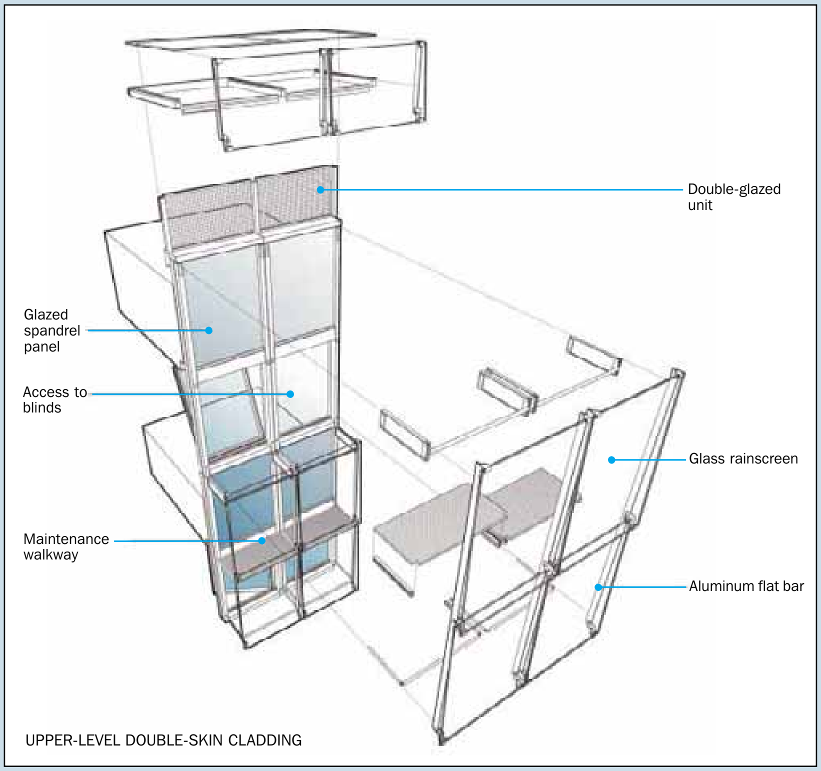

Aurora Place, London

At the upper levels of the building, the outer layer of double-skinned facade is made up of frameless glass panels, angled at 3 degrees, with open joints. Behind the screen is a walkway used for maintenance. Tenants can open the windows to provide natural cooling. The window blinds are automatically raised or lowered based on current conditions in each tenant zone. The blinds are accessible from the outside for cleaning and maintenance.

bors. Upper levels, on the other hand, are all glass, yet those floors can be cooled with only natural ventilation during much of the year. The outer layer of the 2-foot-deep double walls comprises a rain-and-wind screen of shingled, frameless glass panels, angled at 3 degrees, with open joints. Behind it is a maintenance walkway and solar blinds adjacent to an inner window wall with operable panels. The two layers were delivered to the job site as 5-foot modules and prefabricated on-site into units with integral blinds and catwalks.

To ensure that occupants enjoyed the benefits of the complex facades, Arup Associates and facade engineers from Arup planned an unusual daylighting scheme. In each tenant zone, photosensors were mounted on inner facades to automatically control the raising and lowering of blinds based on local conditions. "There are reliability questions for automated daylighting control," admits Arup facade engineer Neil McClelland. "Any design should recognize that there will be issues and allow for access to the blinds for cleaning and maintenance." McClelland adds that the main reason to use automated blind controls is for maximum transparency, not energy-efficiency.

Stick-built robotics

For many architects, the European tradition of customizing an off-the-shelf, unitized, double-wall product presents a safe and effective entrée into the world of interactive facades. Less prevalent is the craft-based approach used by Thom Mayne for Caltrans District 7 Headquarters in Los Angeles, which opened in late 2004. There, Morphosis Architects pulled apart the envelope's functional elements, "redelegated" them, and coordinated their job-site "reassembly" among seven exterior subcontractors, says project leader Pavel Getov.

The result combines a large photovoltaic array and independently controlled, automated elements within a multiple-layer facade. The prominent shading layer of perforated metallic panels on east and west facades cuts initial solar heat gain by about 15 percent. The screen hangs about 1 foot from the slab edges of a weather-wall of metal framing, gypsum sheathing, and PVC membrane. In this way, the intervening space functions partly as convective cavity. One thousand or so of the scrim panels, corresponding to ribbon windows behind, open or close daily. Those on the east close in the morning, those on the west in the afternoon. For longevity, the architects specified stainless-steel hardware and a single pneumatic lift per panel, rather than the pair of electrical actuators originally considered. A rooftop sensor signals the panels to close during high winds.

According to Getov, 3D modeling and mock-up testing ensured the performance of the stick-built envelope under wind, rain, and seismic conditions. The firm shared a single building-information model among consultants and manufacturers, and component prototypes made on a 3D printer. Still, says Getov, "A lot of the design is

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resolved through the mock-ups." Even with extensive reviews and site visits for the customized, kinetic countenance, the project penciled out at $165 per square foot, including finished interiors and design fees—about the same as an average office building. The building's small facade area in relation to its floor plate accounts in part for the cost-effectiveness. Energy savings are projected at about 40 percent. Getov's advice for architects interested in the process seems counterintuitive. "The small manufacturers can be the most helpful because they don't already have a set solution in place," affording architects more conceptual control and collaboration, he explains. "It allows you to break down the process."

Omniscient control, or edge monkeys?

Beyond two ways to build a wall, the Morphosis projects also suggest two ways to make walls smart: independent control or centralized control. A project at Cooper Union in New York will integrate all facade operations into the building automation system (BAS), whereas Caltrans has independent (although Internet-accessible) envelope controls and a common override function only for emergencies, such as high winds.

Recent thinking on active envelopes mirrors that for m/e/p design generally: avoid complexity and, therefore, very integrated schemes. Some projects, such as Arup's Plantation Place , have explored highly localized automation. There, sensors mounted on the inner facade detect solar conditions for each tenant zone. Solar blinds in specified areas raise or lower autonomously, depending on the local temperature, sun strike, and occupant preferences. Natural ventilation rates are determined locally as well. Like the robotic edge monkeys, however, such islands of control need occasional global guidance—and the will to ignore the people they serve. "You can't rely on human input," says Arfon Davies, an associate with Arup Lighting in London. "And if automatic shading controls are independent from the BAS, they should still be able to send a signal to the BAS to indicate a fault."

Davies adds that even the most automated systems should have a local override. More important, says LBNL's Lee, "Windows are very much a personal item, and having that control taken away from you can be a pain. You have to have manual override." Taking a related tack, Gould Evans chose to split the control of interior blinds for Biodesign Institute. Above 8 feet from each floor, the shading is fully automated based on solar position; below that, occupants choose. "These systems begin to have a determinist impact on the psychology of the user," says Gould Evans principal Jay Silverberg. Is any optimism warranted for a new wave of smart buildings? "Architectural environments will be increasingly smart and responsive and capable of complex behaviors," predicts Michael Fox, the Venice, California–based architect and robotics expert. "Designing interactive architectural systems is not inventing, but appreciating and marshaling the technology that exists and extrapolating it to suit an architectural vision."

Edge monkeys, indeed. ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- **Read the article "Robo Buildings: Pursuing the Interactive Envelope" using the learning objectives provided.**
- **Complete the questions below, then fill in your answers (page 204).**
- **Fill out and submit the AIA/CES education reporting form (page 204) or download the form at www.archrecord.com to receive one AIA learning unit.**

QUESTIONS

1. Where did double-glass or interactive-envelope buildings first appear in the early 1980s?
a. Germany
b. Austria
c. England
d. New York

2. The driving forces for interactive envelopes are all except which?
a. occupant satisfaction
b. sustainability
c. value engineering
d. stringent energy codes

3. The conventional application responsible for the fervent support of interactive envelopes by designers is which?
a. fresh-air ventilation
b. daylighting control
c. thermal-mass cooling
d. radiant cooling

4. Adoption of high-tech envelopes has been slow because architects worry about which?
a. operable components being stripped off buildings
b. stringent energy codes
c. sustainability
d. the novelty of the idea

5. The drawbacks to using interactive envelopes include all except which?
a. high installed costs
b. mismatched warranties
c. occupant satisfaction
d. famous failures

6. The typical energy profile of large commercial buildings shows what amount of the cooling load is needed to counteract the heat gain from lighting and sun?
a. one fourth
b. one third
c. one half
d. two thirds

7. Smart windows consist of which?
a. photosensors
b. dimmable lighting controls
c. switchable glazings
d. solar-tracking devices

8. The energy draw of conventional fixed blinds is beat by up to 52 percent in summer by which?
a. automated daylight setups
b. dimmable electric lighting
c. switchable electric lighting
d. a combination of all three

9. The European use of the term "active facade" describes which?
a. primary space conditioners
b. any ventilated double wall
c. edge monkeys
d. hoppers, vents, and shades

10. According to Morphosis's Pavel Getov, small manufacturers can be the most helpful to architects contemplating the robotics process for which reason?
a. they will cost less
b. they have more experience
c. they do not have a set method in place
d. they will exert more control

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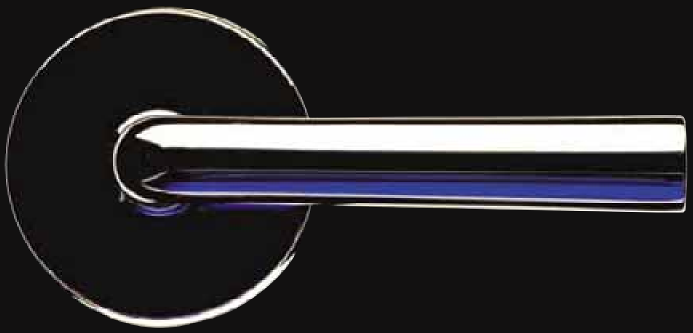

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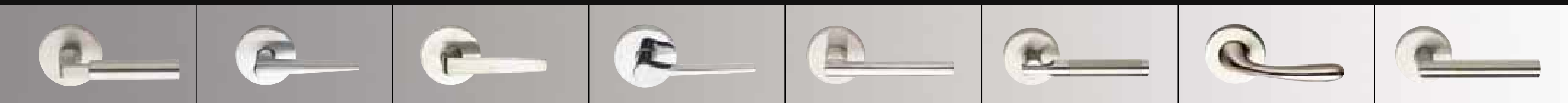

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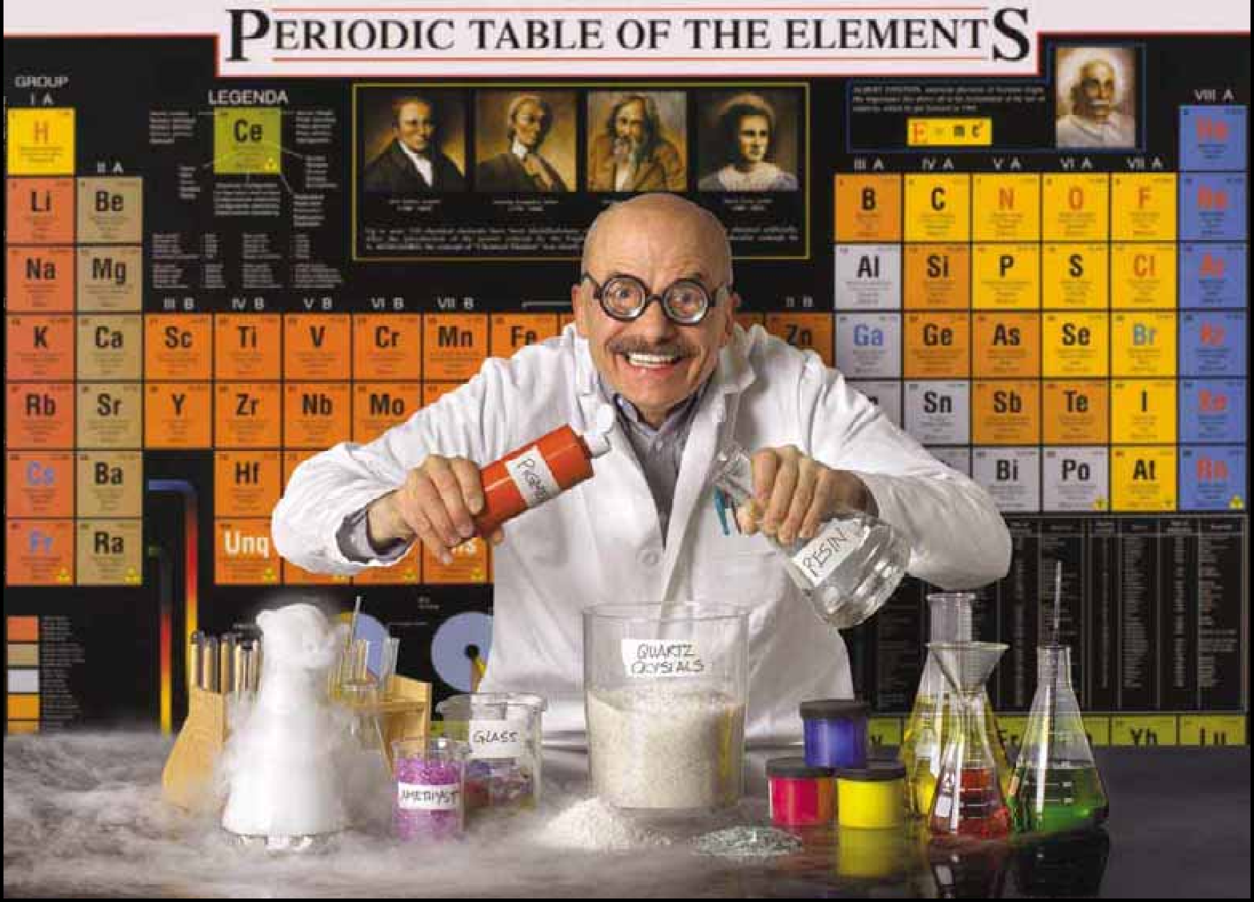

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RUBY ON INTEROPERABILITY

DAVID I. RUBY, P.E., S.E., Structural Engineer. Principal, Ruby & Associates P.C., in Farmington Hills, Michigan. Specializing in steel designs that speed and ease constructability. Recently consulted on a community college project where his design and use of Interoperability resulted in a hyper-fast and efficient design—and a six-figure rebate from the fabricator to the school.

***INTEROPERABILITY** is the ability to manage and communicate electronic product and project data between collaborating firms. It allows the exchange and management of electronic information, where individuals and systems are able to identify, access, and integrate information across multiple systems. The goal of interoperability is to create greater efficiencies by eliminating the manual reentry of data, duplication of business functions, and the continued reliance on paper-based information management systems. The steel design and construction industry uses the CIMSteel (CIS/2) neutral file format to enable interoperability.*

CONSTRUCTABILITY "When doing the pricing on a recent project, Douglas Steel Fabricating Corporation asked us to review the job to enhance constructability. It was a community college project that originally called for fully welded moment connections and knee-braced frames. The number of pieces and amount of field welding made the project uneconomical. Douglas Steel sent us the original design documents. We put together an alternative design that satisfied the intents of the owner and architect. We then transferred our CIS/2-compliant model back to Douglas Steel, enabling them to process the model in SDS/2 so they could bid both the original and alternative designs on time. Without CIS/2 Interoperability — or what used to be called Electronic Data Interchange — we couldn't have turned it around fast enough to keep the job on schedule."

VALUE "The architect's drawings, the site constraints, points of access, equipment — there are so many different things to consider to come up with the most economical product that meets a client's needs. A lot of people talk about value engineering. What that really means is examining a set of decisions that have already been made, and going from there. You're talking inside the envelope. But when you design for constructability and value, outside-the-envelope thinking leads to things like speed to market and achieving budgets. CIS/2 Interoperability is a tool that lets us think like this."

EFFICIENCY "For the community college, the floor beams were spaced at about 3-foot, center-to-center, with a very light metal deck and a reasonably thin slab. As a rough count, we eliminated over 700 members, as well as 11,000 shear studs from the floor system and it was designed so everything could be field bolted. We ended up with a metal deck system and a thicker slab that added a little dead load to the structure, but increased the strength of the composite beams. Basically, we made it easier to build, stronger and much more economical. Plus, we stayed on schedule because the design only took four days thanks to CIS/2 Interoperability."

PERSPECTIVE "Working with Fazlur Khan to design the Hancock Building early in my career gave me a different feel for construction. One thing about the Hancock: The steel out-raced concrete to the roof. In fact, steel was 25 floors ahead at one point! We even had to design temporary braces to keep the structure together because we were so far ahead. Faz was such a great concept engineer. I learned you can't just look at a building as a design — it has to be built too! Piece by piece, stability is an issue during construction. But once it's done, the issue goes away and you let the building act as it should."

COMMUNICATION "The advantage of Interoperability is speed through the elimination of paperwork and many layers of communication. Typically, a detailer would verbalize a problem to the fabricator who would submit a request for information to the contractor who'd send it to the architect. A response from the structural engineer would be communicated through the contractor to the fabricator and ultimately, back to the detailer. And many times the detailer would respond, 'That's not the question I asked.' This happens time and time again when you're trying to explain a three-dimensional problem in 50 words or less. CIS/2 Interoperability means the pertinent decision-makers — the engineer, detailer and fabricator — can look at the model in real-time, discuss the problem and collaborate on a solution. Better, faster communication is the value of Interoperability."

INTERACTION "With Interoperability, I work with the fabricator and detailer directly. We receive their files over the Internet, pull them into our system, make comments and send them back in just a couple of hours. This saves a tremendous amount of time and keeps us on schedule. Let's say there's a connection issue, or perhaps the fabricator has a question. We're not waiting because the drawings are in the mail. They just send us their three-dimensional models, and we solve the problem today. That's what Interoperability is all about."

UNIVERSAL "The files a fabricator works on are generated from the RAM model we send them. So when they pull our models into the system for detailing, they have the most current designs. There is less paperwork to keep track of and that's a significant advantage. If I send files at noon, by 3 o'clock the fabricator has his bill of materials. Manually, this process took a week. And we're not talking just 40 hours — but two or three people putting in 40 hours to pull that all together. Those extra hours are an expense completely eliminated due to Interoperability."

INTEROPERABILITY "The primary reason for Interoperability is to integrate design and construction processes by eliminating the need for manual re-entry of data. The advantage for steel is that the CIS/2 standard enables compliant software—Tekla, SDS/2, Bentley, RAM, FabTrol and others—to exchange data electronically with accuracy and speed. In fact, CIS/2 makes most structural steel design, detailing and manufacturing applications interoperable."

STEEL "Steel already gave us a much quicker delivery time. And that's now clearly enhanced by CIS/2 Interoperability. Steel lets me build a structure that can be modified, easily reinforced, adapted to another use and has overall economy from start to finish. Unless you're building sidewalks, there's never a reason not to use steel."

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Getting on Board with Building Information Modeling

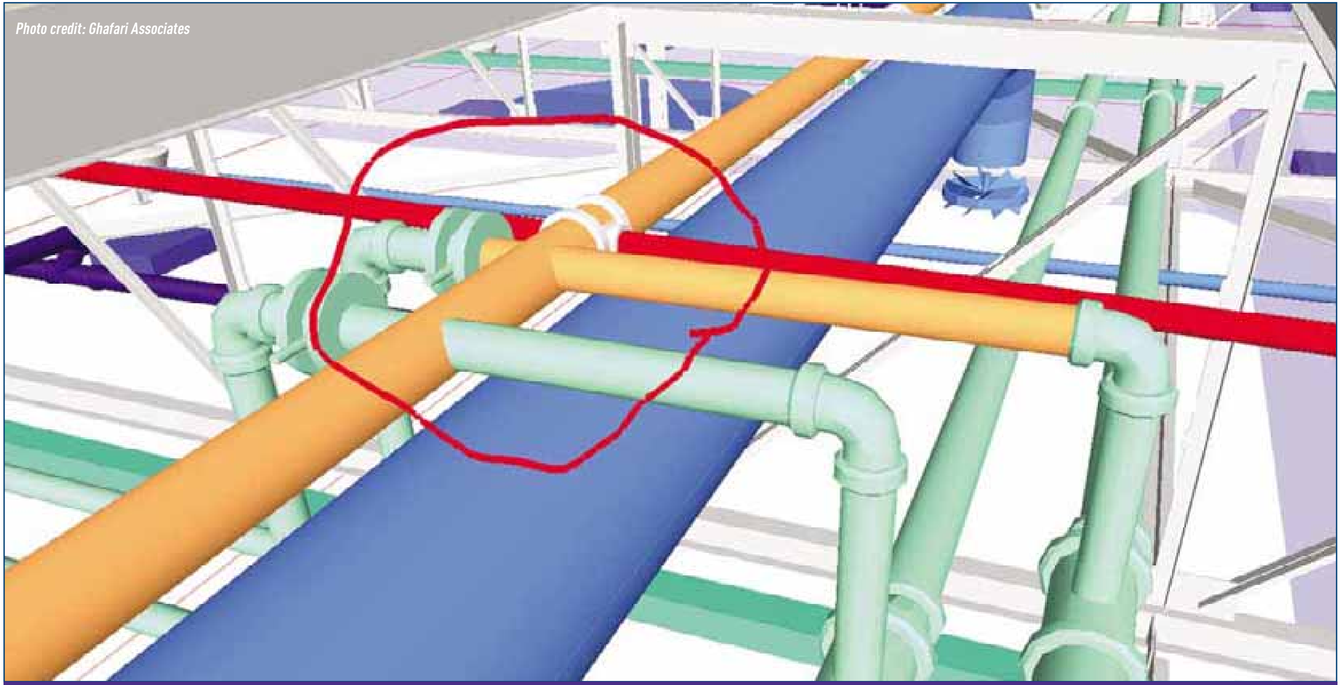


Photo credit: Ghafari Associates

The 3-D model of General Motors' new engine plant allowed A/E firm Ghafari Associates and design team members to digitally detect and correct interferences between building components early in design.

Using 3-D modeling to integrate the design and construction process

"If you want to survive, you're going to change; if you don't you're going to perish,"
- 2005 Pritzker Prize Laureate, Thom Mayne, FAIA, referring to Building Information Modeling at the 2005 AIA Convention

Provided by American Institute of Steel Construction

By Larry Flynn

Architects are increasingly adopting Building Information Modeling (BIM) as standard practice, and rising to the challenge of "change or perish." The sentiment echoing throughout the building design and construction industry is that the days of two-dimensional (2-D) drawing are numbered. BIM allows for more collaborative, integrated design-construction teams that provide value to owners and design professionals.

Like computer-aided design (CAD) in the 1970's, BIM–the process of using three-dimensional (3-D) modeling technology for creating, communicating, and reviewing building information–is the next step in the evolution of the design and construction process. BIM offers a better way of delivering projects in a collaborative and less fragmented fashion that blurs the line between design and construction. With BIM, the project is designed and virtually constructed during the design phase, which allows construction to proceed more quickly in the field, reducing overall project costs, and enabling the building to begin operation sooner. The result is a benefit to owners, and the project team.

"BIM is about sharing better information, earlier in the process, and broadly," says Daniel Friedman, FAIA, director of school of architecture, University of Illinois at Chicago. He says BIM holds the potential for immediate quantity surveys, identification of conflicts and omissions, fewer change orders, project delays, and cost overruns, and more clearly defined and shared accountability, risk, and reward.

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Getting on Board with Building Information Modeling.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 167, then follow the reporting instructions on page 206 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Apply Building Information Modeling (BIM) to a building project.*
- *Understand the major benefits of BIM.*
- *Recognize how BIM enables an integrated project team to deliver a project that is completed faster, is less expensive, of higher quality, and safer than those developed with traditional delivery systems.*
- *Learn how collaborating with the structural steel industry can provide design professionals with valuable information and best practices when applying BIM to projects.*

Photo credit: Structural Consultants Inc. Design Architect: Studio Daniel Libeskind

3-D modeling and team integration enabled steel erection of the Denver Art Museum expansion to be completed two months ahead of schedule.

Photo credit: Miller Hare

The 3-D visualization model used on the Denver Art Museum expansion by local architect Davis Partnership, Studio Daniel Libeskind's joint venture design partner, became a BIM model during the project.

"BIM will change the distribution of labor in the design phases," says Carl Galioto, FAIA, partner, Skidmore, Owings & Merrill (SOM), New York. "When done correctly, the labor is front-loaded earlier in the design process, during the schematic and design development phases, and less in construction documents."

Steel Industry: A Model for Success

While most architects and other members of the building team are only beginning to apply BIM to projects, the structural steel industry is using 3-D modeling and interoperability–the use of software systems that are able to communicate and exchange data and information through a neutral file format–to integrate the design and construction process and speed the delivery of the structural steel package. Structural engineers are collaborating with steel detailers, fabricators, and erectors to share and exchange 3-D model information to create detailed designs for steel-framed buildings with tight tolerances. On numerous projects, this allowed mill orders to be placed earlier and steel to be delivered and erected on site more quickly, with few, if any field changes required. Fewer field changes enable the steel teams to provide a quality product, with less waste, and greater safety.

Using BIM on General Motors' new $300–million V6 engine plant in Flint, Mich., enabled the steel mill order to be placed eight weeks earlier than typically would be possible and steel erection began eight days early, says Lawrence F. Kruth, P.E., engineering and safety manager for Douglas Steel Fabricating Corp., Lansing, Mich. Construction of the plant was completed five weeks ahead of schedule with no change orders, says Samir Emdanat, manager of advanced technologies for the architectural/engineering firm Ghafari Associates, Dearborn, Mich. BIM enabled the project's integrated building team to shave 24 weeks off what typically would have been an 85-week design and construction schedule. In benchmarking previous projects, GM estimates that three to five percent of total construction costs would have been saved by implementing BIM on those projects, according to Laird Landis, GM's senior technological engineer.

Modeling the steel and mechanical, electrical, and plumbing (MEP) with tight tolerances meant that the steel frame, sheet metal, and piping all fit into place in the field like an erector set, reducing construction waste. Less waste and field work resulted in a safer construction site, with only one injury recorded on the project, which was unrelated to construction activity.

In Denver, the need to understand, document, and coordinate the complex design by Studio Daniel Libeskind for the Denver Art Museum expansion, scheduled to open in Fall 2006, dictated sharing of the 3-D model between Denver architect Davis Partnership and the project's structural engineer, steel connection designer, and steel delivery team. "It's difficult to believe the project could have been done without BIM," says Davis Partnership's Maria Cole, AIA. Working with general contractor M.A. Mortenson, the integrated design-build steel team completed the project's steel erection two months ahead of schedule, after starting the design process two months behind schedule and returning $400,000 to the owner in the process.

Championing a Better Way

The structural steel industry has championed the use of 3-D modeling and the value of a vendor independent suite of interoperable design and fabrication programs since 2001. Those efforts have paid major dividends for steel-framed projects in bringing many of the promised benefits of BIM to the structural framing system segment of projects. The lessons learned by the structural steel industry can be utilized to form a roadmap for design professionals moving toward BIM implementation in their practices.

The structural steel industry recognized that errors made in producing, interpreting and integrating 2-D construction documents were plaguing the construction industry at a time when owners were demanding that projects be completed in less time, while staying on or coming in under budget. Complicating the issue was the continuing pressure being placed on architects and engineers to reduce fees and accelerate schedules. The end result was a decline in the quality of construction documents resulting in an avalanche of requests for information (RFIs) and change orders. This resulted in the stifling of innovative design, increased risk, escalated costs and extended schedules–the exact opposite of the desire of the project owner. The inability of design and construction team members to communicate and exchange data clearly and efficiently through the use of CAD-based technology created an environment that fostered adversarial relationships instead of collaboration and invited litigation. Selected structural steel projects, such as GM's

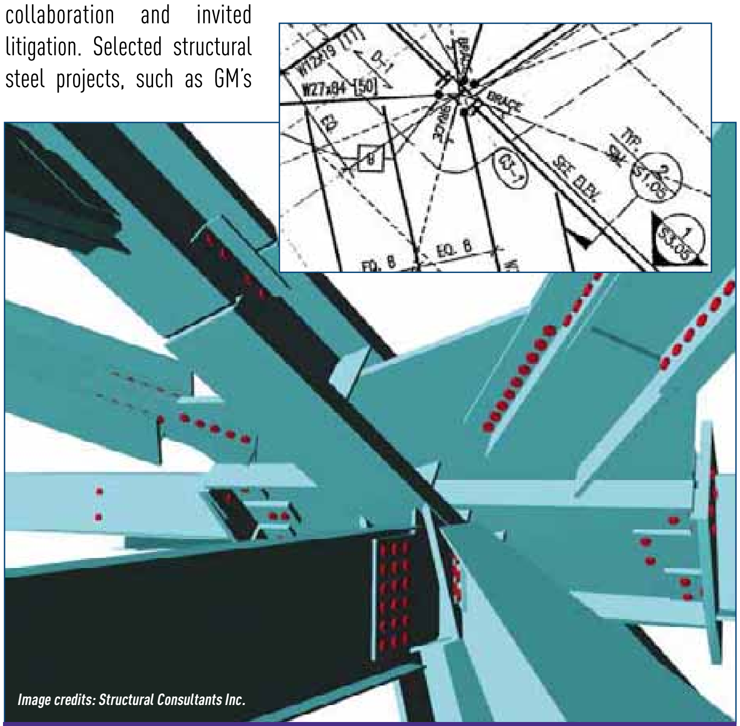


Image credits: Structural Consultants Inc.

A comparison of a 2-D drawing and a 3-D model of a typical steel connection on the Denver Art Museum expansion illustrates how much easier it is to visualize complex objects using 3-D modeling.

engine plant, the Denver Art Museum expansion, and many others, are overcoming these barriers through the collaborative efforts of structural engineers and steel fabricators using 3-D modeling as a common design and construction vehicle. The transition to this process has not been easy, requiring a redefinition of the design and construction process.

Architects Making the Transition

Architects and architectural firms are beginning the process of transitioning from existing CAD environments to BIM, utilizing 3-D computer-aided design and construction, training staff, and applying BIM successfully on projects, as part of integrated design and construction teams. For that transition to be effective, BIM must be clearly understood in terms of its benefits, technology, and implementation.

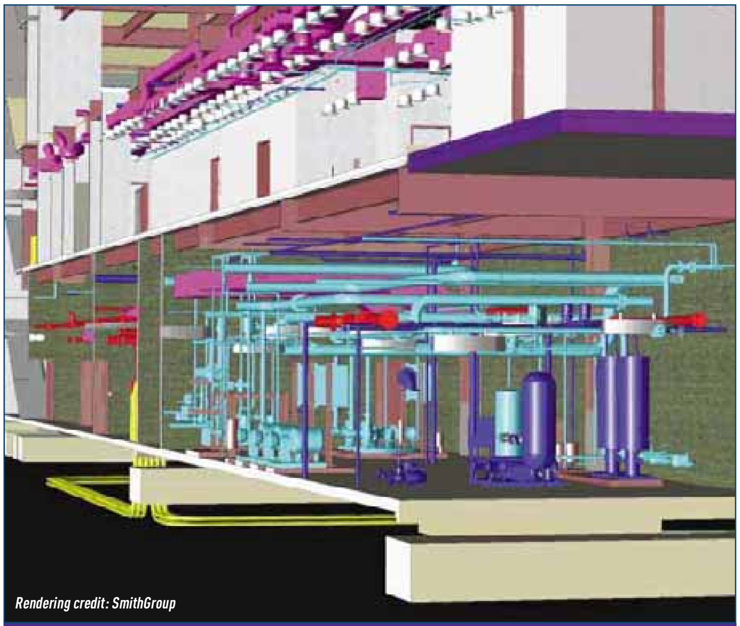
Just as the success of CAD in transitioning building design from the drafting table to the computer required a cultural shift for the entire building design and construction industry, the transition from CAD to BIM tools and processes will require a similar shift as well. Internally, firms need to evaluate how this transition will affect their in-house technology, staff, and their ability to fund and support the transition. Externally, the firm must seek out appropriate projects and partners that they believe lend themselves to the BIM process and move forward.

> *"BIM will change the distribution of labor in the design phases. When done correctly, the labor is front-loaded earlier in the design process, during the schematic and design development phases, and less in construction documents." -- Carl Galioto, FAIA, partner, Skidmore, Owings & Merrill (SOM), New York.*

SOM and Detroit's SmithGroup are two large, multi-office A/E firms making the transition to BIM. SOM's New York office is using 3-D modeling on a number of projects, including New York's Freedom Tower. "We're looking at BIM as being a complete database, as opposed to just 3-D information," says SOM's Galioto. The firm is using the model to arrive at and optimize intelligent solutions, test applications and simulations, such as thermal, daylight, glare, and computational fluid dynamics–the use of technology to study things that flow–for heating, ventilating, and air-conditioning. The firm also is using BIM for collision detection, points in the 3-D model that illustrate where the building's structure and MEP ducts, piping, and equipment improperly intersect with one another.

The next step for SOM is interoperability, the exportation of data and information via the 3-D model, as opposed to producing traditional 2-D drawings. The firm is working with curtain wall manufacturers on this process. "Interoperability is the challenge," Galioto says. "We are spending a lot of time finding ways to get the software to work together. It all comes down to the integration of multiple models. The structural steel industry is ahead of the curve on this."

The goal of SmithGroup, a firm with 800 architects, is to be modeling all of its projects in 3-D in 2006. The firm has implemented BIM on a number of key pilot projects throughout the United States, including a corporate pharmaceutical lab facility in the Detroit area, the new headquarters of general contractor Sundt Construction in Tempe, Ariz., and an expansion of Comer Children's Hospital in Chicago. The Comer project, due to be completed in Spring 2006, is the Chicago office's ninth BIM project, the first to integrate the architecture with the structural steel frame and the mechanical and electrical systems. "BIM is so important for where we're going," says principal Jens Mammen, leader of the Chicago office's BIM transition. "Strategically, BIM is on the verge of revolutionizing how we deliver our projects. We don't draw buildings any more, we build buildings."


Rendering credit: SmithGroup

In the design of Chicago's Comer Children's Hospital expansion, A/E firm SmithGroup integrated the architectural design with the structural steel frame and mechanical and electrical systems.

The true value of an integrated BIM project is realized downstream, during the design and construction process. Collision detection and coordination of the project with design and construction team members is where BIM benefits the SmithGroup financially and saves costs on the project, says Mammen. "Fifty percent of coordination is about the 2-D drawing itself," he says. "With the 3-D model, the project is so well coordinated and built so quickly that we're receiving very few questions from the field, especially during the bidding process."

On the Comer project, the firm received only six RFIs in the bidding process, an astoundingly low number compared to the hundreds that would typically be received. For Mammen, the benefits attainable through BIM are too great to ignore: "I can't foresee ever going back to the 2-D world."

Transitioning the Practice

The success of CAD over the last 30 years has resulted in most design firms being so firmly entrenched in the technology that it can create a barrier to the transition to BIM, says SmithGroup principal Rick Thoman, AIA, IT manager in the firm's San Francisco office. But SOM's Galioto says architects will welcome the transition: "By switching to the model, our people say that they feel more like architects because they are working in three dimensions."

Transition to BIM will require research, information gathering, and financial backing of the firm's leadership. Unlike the early days of CAD, when a junior staff member or draftsperson could be placed in front of an early generation PC, given an early version of a CAD package and be told to figure out a "better, faster way to draw," the transition to BIM will require commitment from senior staff members intimately involved with design decisions and processes.

The transition to BIM will require an investment of capital and resources from firms, demanding strong commitment from the firm's management over an extended period of time. In 2006, the typical cost of a BIM application can range between $5,000 and $6,000 or more, but this is only a small portion of the cost. Annual maintenance subscriptions fees, consulting fees, training, current generation hardware, and climbing the learning curve will cost much more than the cost of the software. To ease the transition while holding down

How BIM Benefits Architects

Building Information Modeling offers architects the following advantages:

- *Enhanced influence over the entire life of the project:* BIM enables architects to be the primary shaper of the built environment. Over time, architects have seen their influence upon building projects erode as project progress toward completion. BIM gives architects a greater capability to see their designs through to project completion. The BIM process gives architects the power to estimate costs in real time, keeping projects on schedule, avoiding the necessity for last-minute changes, and reducing project scope as the only means of addressing project cost overruns.

- *Providing a better solution to clients:* As the member of the building team with the earliest contact and the closest relationship with the owner, the architect has the opportunity to enhance the firm's image as an industry leader on the cutting edge of technology and industry practice. Being an experienced BIM practitioner separates a firm from the competition, giving the architect a powerful way to bring added value to the owner and their project. Architects can demonstrate to owners how BIM can be implemented to reduce project costs, shorten project schedules, increase project quality, and improve safety through information sharing, emphasis on front-loaded design and virtual building, and off-site fabrication of building components. One of the maxims in the construction world is that a project owner may ask for cheaper, faster and better, but will only be able to get two of the three. The evidence from projects constructed utilizing a BIM methodology indicates that it is possible to deliver completed projects that are completed faster, are less expensive, of higher quality, and with increased project safety, and reduced exposure to risk and litigation.

- *Increased profitability:* Early collaboration with the structural engineer, steel team, MEP consultants and other specialty contractors leads to more accurate and complete drawings the first time, as well as efficient resolution of RFIs, and fewer RFIs later in the project. This saves time and money for the architect in that the project proceeds more efficiently and quickly to completion, allowing the firm to handle more projects. Fewer, if any, change orders means a reduction in the cost of those changes and delays attributed to the architect.

- *Reduced risk and possibility of litigation:* The integration of the entire design team through the use of 3-D computer-aided design and construction technology nurtures cooperation, trust, and team building, which reduces risk instead of increases it. Interferences are identified and resolved earlier on in the design process, reducing the number of issues that arise late in the project and lessening the likelihood of litigation. With BIM, it can truly be said that before construction begins, an as-built model of the project exists.

- *Preservation and growth of the practice:* BIM is an important innovation and trend for the building design and construction industry, and is increasingly applied to large-scale, complex projects. Most industry experts predict that in 10 years, 3-D-integrated BIM will be the principal method in which the built environment is designed and constructed. Architects have the opportunity to step forward, engage the process, and assume more responsibility for their building designs. As much as a technological change, the transition to BIM is a cultural change, requiring a rethinking of how the design and construction process can and should work.

costs, firms such as SmithGroup are selecting a software purchasing option called a "crossgrade," which allows a firm to migrate a software license from one software vendor's product to another of its products. This also allows a firm to continue to receive upgrades for both products, says Thoman.

Transitioning a firm can be a complex and challenging process, especially for large, multi-office firms with multiple disciplines. Some suggestions include:

- Consider forming a team comprised of individuals from the different offices and disciplines within the firm, and possibly an outside non-vendor consultant to evaluate the firm's needs, and to develop a perspective on BIM in the industry.
- Appoint one individual at the firm to champion the transition and coordinate the overall process.
- Consider conducting tours of the firm's offices with upper management to explore how to accelerate implementation of BIM. SmithGroup is implementing this practice.
- Conduct just-in-time training of staff on BIM tools in conjunction with actual building projects. SmithGroup, SOM, Ghafari Associates, and others agree that this is the most effective training method. Abstract training won't do, says SOM's Galioto.
- Be proactive about implementing the BIM tools that will prepare the firm to move forward on a project. Care must be taken not to overcommit to a solution until there is a clear understanding of the desired workflow for the trial project. Ideally, the project should be one for a repeat client with whom the firm has a positive, open relationship. The client should be part of the transition process, recognizing the benefits that can accrue, while being aware of the challenges that can often occur on pilot projects.

Enter the transition with a proactive mindset:

- Perform due diligence by conducting research, reading industry reports, white papers, and publications.
- Attend meetings and conferences where BIM is on the agenda.
- Communicate with peer firms to learn about their approach to the transition.
- Seek information and advice from industry professionals who have had success with 3-D modeling and integration to lower costs and shorten project schedules for owners, such as steel industry detailers, fabricators, and structural engineers.
- Use software vendors as information resources and providers of training.
- When using out-of-the-box BIM software, consider developing and writing guidelines for project teams, which will be using the technology, so elements such as title boxes and pull downs will automatically be there for them, as is the case with technology that meets the present CAD standard.

Rendering credit: Putnam, Collins, Scott Associates

With the steel team utilizing a design-build framework and 3-D modeling, delivery of the structural steel for Mt. Tahoma High School, Tacoma, Wash., designed by BLRB Architects, Tacoma, cut the construction schedule by three months.

Applying BIM to Projects

Once a firm has conducted its research and is comfortable with the tools it has in place, the best way to get started is to just do it. Experts recommend that architectural firms carefully select projects for BIM and apply them. One litmus test in determining if a project is right for BIM is whether a firm can deliver a completed project to the owner that is cheaper, faster, better, and safer by utilizing the BIM process. ■

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at ***http://archrecord.construction.com/resources/conteduc/archives/0604steel-1.asp.*** To receive AIA/CES credit, you are required to read this additional text. The quiz questions below include information from this online reading. To receive a faxed or emailed copy of the material, contact Larry Flynn by e-mail at flynn@aisc.org or call (312) 670-5437.

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LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Apply Building Information Modeling (BIM) to a building project.*
- *Understand the major benefits of BIM.*
- *Recognize how BIM enables an integrated project team to deliver a project that is completed faster, is less expensive, of higher quality, and safer than those developed with traditional delivery systems.*
- *Learn how collaborating with the structural steel industry can provide design professionals with valuable information and best practices when applying BIM to projects.*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self report form on page 206. Follow the reporting instructions, answer the test questions, and submit the form. Or use the Continuing Education self report form on *Record's* web site—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. The key to reducing risk and building trust in a BIM project is:
  a. Collaboration, integration, and communication
  b. A good lawyer
  c. Software
  d. A detailed schedule

2. The most important element of BIM on which to focus is:
  a. The software
  b. The process
  c. The model
  d. The budget

3. With BIM, the project is designed and virtually constructed up front in the design phase, which allows construction to proceed more quickly in the field, reducing overall cost of a project and enabling the building to begin operation sooner.
  a. True
  b. False

4. The true value of BIM is realized:
  a. During pre-planning
  b. Upstream earlier in the design phases
  c. Downstream in the design and construction process
  d. After the project is completed

5. A Building Information Model:
  a. A complete 3-D digital representation of a building system or subsystem
  b. In most cases can replace the term 'construction documents' as it relates to building construction.
  c. May include other BIMs.
  d. All of the above

6. Which of the following is not a benefit of BIM for the architect:
  a. BIM gives the architect enhanced influence over the entire life of the project.
  b. BIM enables the architect to provide a better solution to the client.
  c. BIM reduces the architect's risk and possibility of litigation.
  d. BIM reduces the architect's work load and responsibility.

7. Evidence from projects constructed utilizing a BIM methodology indicates that it is possible to deliver completed projects to clients that are completed faster, are less expensive, of higher quality, and with increased project safety and reduced exposure to risk and litigation.
  a. True
  b. False

8. Interoperability may be defined as:
  a. Use of software systems that are able to communicate and exchange data and information through a neutral file format.
  b. A practice employed to evaluate the operational impacts of BIM on a firm's bottom line
  c. A labor-saving construction technique
  d. The cross-training of staff on CAD and BIM equipment

9. Experts agree that the best way to start working in BIM is to:
  a. Wait until the firm has transitioned its software
  b. Thoroughly train staff in the use of BIM tools before starting a project
  c. Select a project and "just do it"
  d. Begin working in BIM only after the industry as a whole has transitioned

10. The transition to BIM is not without its hurdles and requires some reallocation of:
  a. Effort
  b. Cost
  c. Risk
  d. All of the above

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that makes the design and construction of structural steel easier and more economical.

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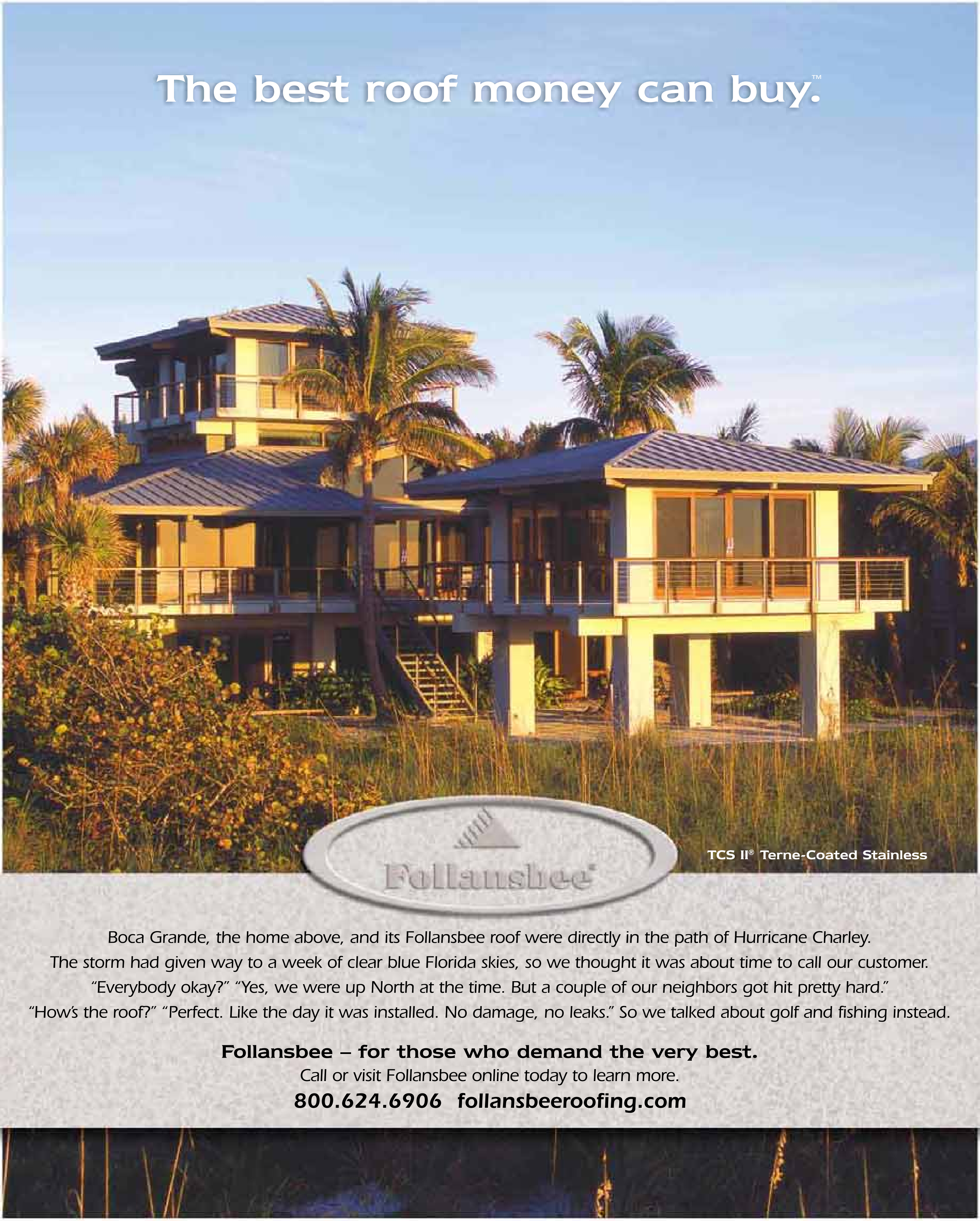

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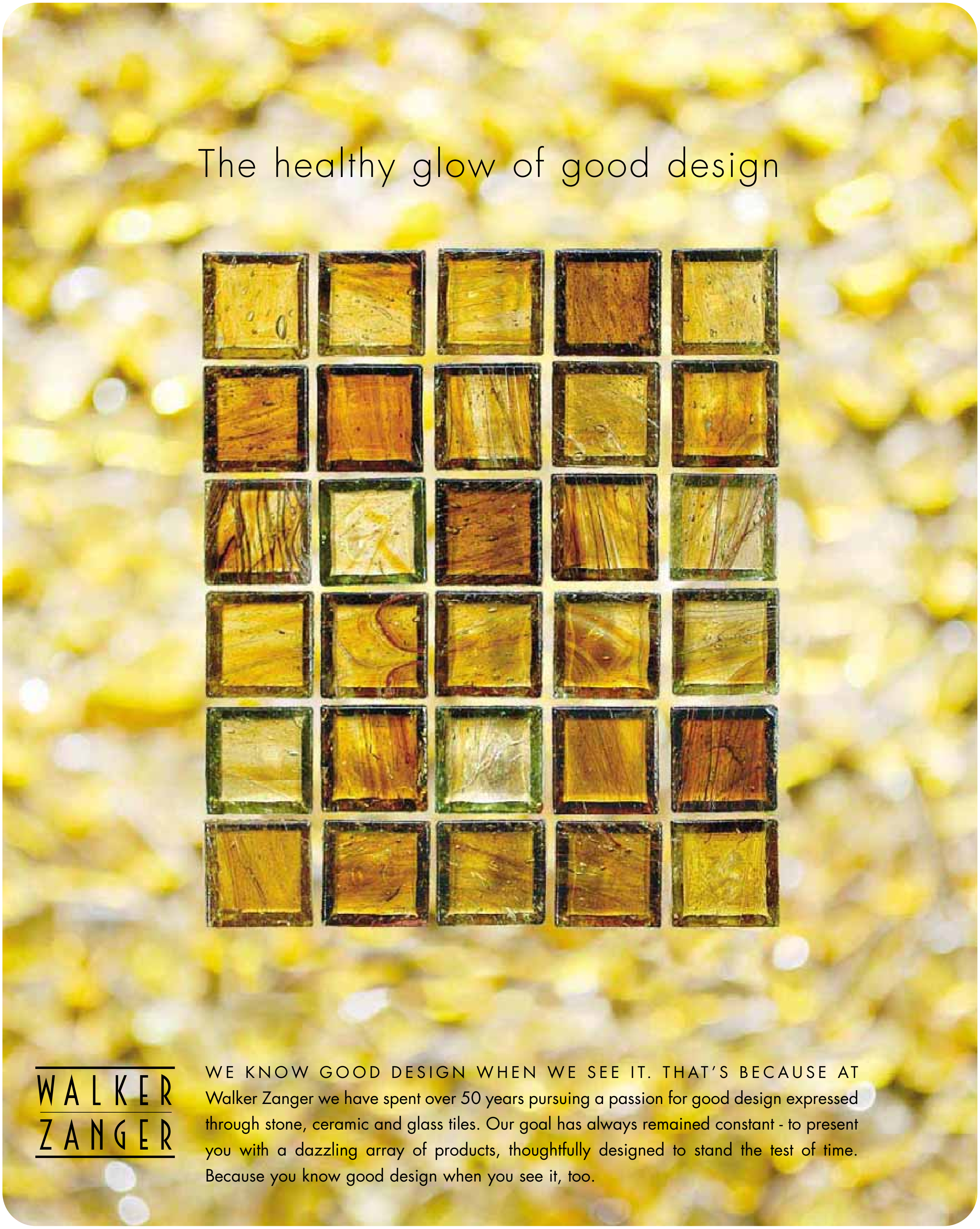

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Products Doors & Windows

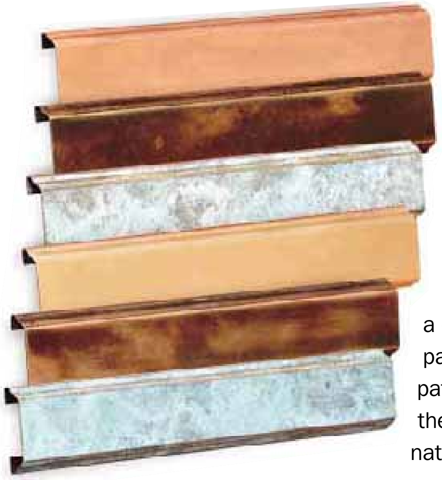
Our roundup of door and window products includes introductions seen at this year's **International Builders Show** in Orlando. At the show, luxurious options, such as copper-and-bronze-clad windows and doors, stood alongside modern conveniences, such as **solar-powered blinds**. *Rita Catinella Orrell*

Handcrafted copper- and-bronze-clad windows and doors

A radically different addition to Loewen's extensive selection of Douglas fir and mahogany offerings, the Cyprium Collection features handcrafted copper- and-bronze-clad windows and doors. Artisanal in detail, down to the soldered exterior joints, capped sill ends, and recessed mullions, the collection is named after Aes Cyprium, the name ancient Romans gave to the copper first mined in Cyprus.

The collection, available in casement, picture/direct set, awning, speciality windows, and terrace doors, develops patinas that define the character of a home's natural locale. Environmental factors such as humidity and salinity work together with time to coat the surfaces with a distinct and ever-changing patina. A palette of custom patina finishes is available within the collection: Natura (unpatinated), Umbra (brown), and Verdigris (green).

Nominal, .040"-thick copper and bronze is used to craft a cladding for sash and frame segments as well as for Simulated Divided Lite bars. All Cyprium Collection products are built on a Douglas fir or mahogany core, which provides natural wood window interiors. The windows are built with a triple-laminated sash that accommodates deeper cladding and glazing-stop profiles to deliver an architecturally balanced appearance. Cyprium door and entryway systems are equipped with standard multipoint hardware with stainless-steel exposed components. Loewen, Manitoba, Canada. www.loewen.com **CIRCLE 200**



Window detailing (above). Copper and bronze palette (right) ranges from Natura (unpatinated) to Verdigris (green).

Window and door prototypes have historic look and modern touches

Collections is a group of high-end window and door prototypes from Weather Shield that blend classic old-world character with fashionable hardware and eclectic finishes. Introduced at last January's International Builders Show, the windows and doors were developed on a window chassis with traditional properties and will feature a blend of assorted wood species and diverse finishes. Surprises include a push-out casement design, hide-away roll screens, and old-style hardware. The massive proportions of the stiles and rails echo the aesthetic of historic wood windows, and a solid 5¼" jamb gives the windows additional heft.

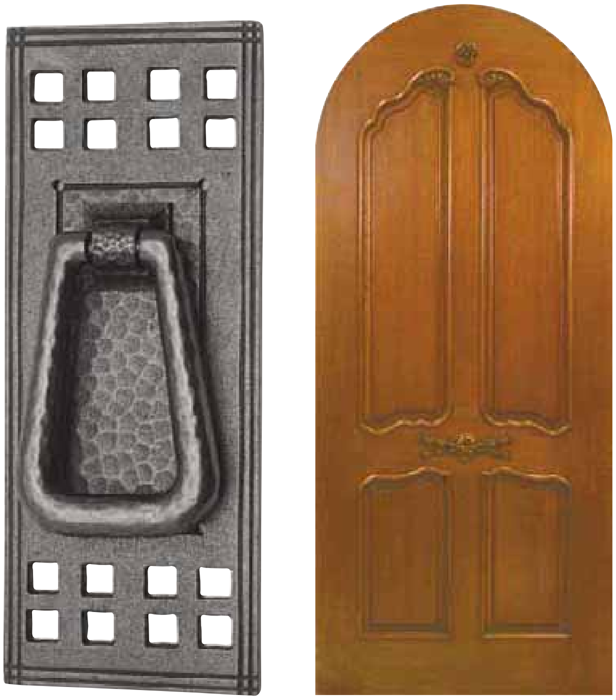
Standard putty glaze stops, interior glazing bead, and Simulated Divided Lite bars deliver the energy efficiency of new technology while capturing the look of historic windows and true divided lites. Weather Shield has collaborated with Stone River Bronze to offer handcrafted hardware on all Collections windows and doors, with a complete product line of pulls, plates, hinges, levers, and lifts. Initial Collections window product offerings will include push-out casement, push-out French casement, awning, transom, picture, and single-hung tilt with wood jamb liner (1¾" sash). Collections' initial door offering will include a French sliding door, hinged patio door, and premium entrance door. Both hinged wood screens and concealed wood screens will be available to enhance the look and function of the new line. The collection is scheduled to be introduced in early summer 2006. Weather Shield, Medford, Wis. www.weathershield.com **CIRCLE 201**

The windows will feature hinged wood screens (above) and hide-away roll screens (right).

Products Doors & Windows

► Latest low-E generation

Andersen Windows' high-performance Low-E4 glass features an exterior coating that, when activated by sunlight, helps reduce dirt buildup and water spots, and promotes faster drying. Exclusive to Andersen windows and doors, the glass will be standard on the manufacturer's 400 Series products. Low-E4 glass is on average 41 percent more energy efficient in summer and 35 percent more energy efficient in winter than standard dual-pane glass. The glass coatings can also reduce glare and cut UV light by 83 percent. A removable protective film applied to the interior and exterior sides of the glass provides additional protection against shipping and installation hazards. Andersen Windows, Bayport, Minn. www.andersenwindows.com **CIRCLE 202**



▲ Making his home yours

Moulding Associates and Biltmore Estate For Your Home have partnered to create a collection of wood entry doors designed to evoke the luxury of Biltmore Estate, George W. Vanderbilt's historic property in Asheville, North Carolina. The collection features the exclusive hardwood Malaga Cherry as well as an American white oak hardwood. Biltmore has also collaborated with Period Brass to offer decorative and functional hardware for door, cabinet, furniture, and bath applications in a range of motifs. Biltmore Estate For Your Home, Asheville, N.C. www.biltmore.com **CIRCLE 205**

► Between-the-glass panels

Pella's new decorative panels for Designer Series windows and patio doors complement the manufacturer's line of between-the-glass window fashions. Designer Series is Pella's exclusive wood window and patio door collection that offers snap-in, snap-out blinds and shades in 25 different colors. Other enhancements to the Designer Series collection for 2006 include fabric panels and panels simulating stained glass that insert between the panes of glass, and an expanded grille offering. Pella, Pella, Iowa. www.pella.com **CIRCLE 203**

▲ Renovating our coastal treasures, one window at a time

The Jeld-Wen Reliable Lighthouse Restoration Initiative is designed to help local lighthouses that are badly in need of care and maintenance. For Jeld-Wen's first test project, the company donated and replaced the windows and entry door at the historic Umpqua River Lighthouse, located on Oregon's southern coastline. Jeld-Wen replaced the warped entry door with a custom fiberglass front door and installed 12 architecturally correct, energy-efficient, double-hung wood windows to replace the aluminum windows installed in the early 1980s. Jeld-Wen, Klamath Falls, Ore. www.jeld-wen.com **CIRCLE 204**

◄ Solar power blinds

Velux now offers solar-battery-powered blinds for its fixed skylights. The new blinds offer the convenience of an electrical blind without the expense of installation by a professional electrician. The built-in solar cell converts direct or diffused light from the sun to electrical energy, which is stored in a battery with a capacity of approximately 500 operations without recharge. The blinds will be competitively priced with existing blind offerings from the manufacturer. Velux America, Greenwood, S.C. www.veluxusa.com **CIRCLE 206**

For more information, circle item numbers on Reader Service Card or go to www.archrecord.com, under Products, then Reader Service.

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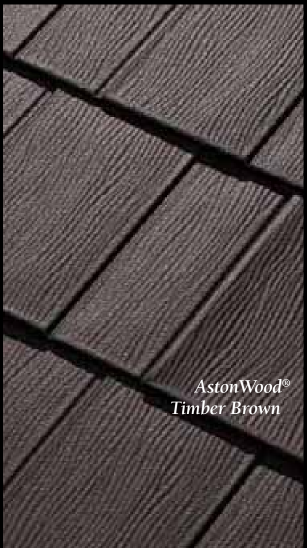

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Product Briefs

◄ Give them a hand in the kitchen

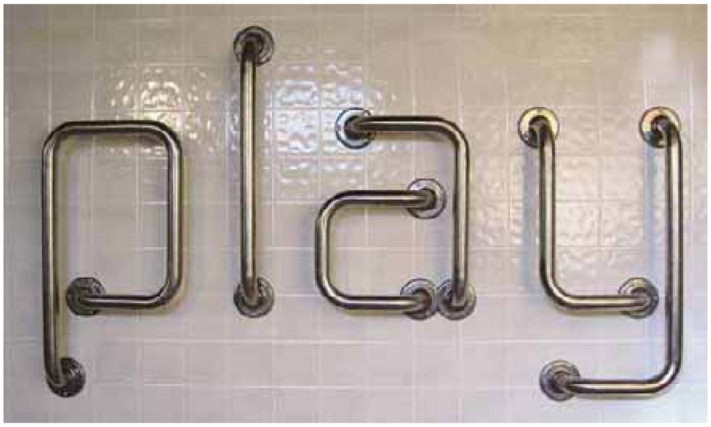
In addition to the traditional activation method of grasping the handle, the Pascal Culinary Faucet allows home cooks to activate water flow by tapping the faucet or using the hands-free option, reserving both hands for cooking and cleanup. While Pascal is in “hands-free” mode, water will run continuously as long as the water work space has an object in it. Pascal also features a pull-down spout to simplify kitchen duties such as filling pots. Water temperature and flow are set by the faucet’s single-handle manual valve. Delta Faucet Company, Indianapolis. www.brizo.com **CIRCLE 207**

► Alternative to stainless

Inspired by the growing interest in metallic finishes for kitchen walls, fixtures, backsplashes, and countertops, the Oiled Bronze antique metallic finish from Jenn-Air can be used as the focal point among stainless appliances or as an entire suite. Stainless-steel accents tie the appliances into a variety of kitchen designs. The finish is available on select refrigerator, dishwasher, wall-oven, hood, cooktop, and warming-drawer models in prices competitive with Jenn-Air’s floating glass offerings. Jenn-Air, Newton, Iowa. www.jennair.com **CIRCLE 209**

▼ Grab-your-attention handrail set

British typeface designer Andrew Byrom has translated his skill for creating unique letter fonts into the Grab-Me series of handrails. Grab-Me is a collection of 26 3D steel tube letters/grab bars for use in swimming pools, spas, bathrooms, or as indoor and outdoor signage. Available exclusively from the designer, the made-to-order letters (about $1,000 each) are manufactured using 1.5"-diameter stainless-steel tubing with a 180-grit brushed finish. Andrew Byrom, Chicago. www.andrewbyrom.com/grabme **CIRCLE 210**



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Product of the Month
Lumistone Solid Surface

Under normal lighting conditions, Lumistone offers all of the typical characteristics of premium acrylic-based solid surfacing; but in a darkened environment, it glows with a greenish yellow or blue cast.

Manufactured by Tower Industries, the material was originally developed to be used as a safety product and is ideal for providing a clear path for evacuation in case of an electrical power loss in airplanes, theaters, or public spaces. Possessing solid surfacing’s inherent ability to be thermoformed or shaped by the same method as wood, it can also be cast in a variety of shapes, for applications ranging from safety handrails on a cruise ship to bar tops in a nightclub to custom inlays in a residential countertop that display hidden messages in the dark.

Lumistone is available in a range of color options in sheet form, strips for use as inserts, precast in bowls or other shapes, or as a precatalyzed liquid mixture for creating custom decorative inlays. The strength and duration of the material’s luminous glow can also be adjusted as needed. Tower Industries, Massillon, Ohio. www.towersurfaces.com CIRCLE 208

◄▲ “Retro” grade time travelers

The brainchild of two architects and two graphic designers, the multifaceted AvroKO is notable for its highly conceptual eateries (such as PUBLIC in New York City, owned and operated by the company), residential interiors, and brand imaging. Not surprisingly, this diverse design studio's first furniture collection takes its cues from the preindustrial cars and cycles of the late 19th and early 20th centuries. Dubbed The Transport Series, the richly detailed mix of cold-rolled steel, red-tinged leather, and walnut comprises a chair, ottoman, and stool (shown), as well as a height-adjustable table, floor lamp, and playful storage barrel/pet bed. AvroKo, New York City. www.avroko.com **CIRCLE 211**

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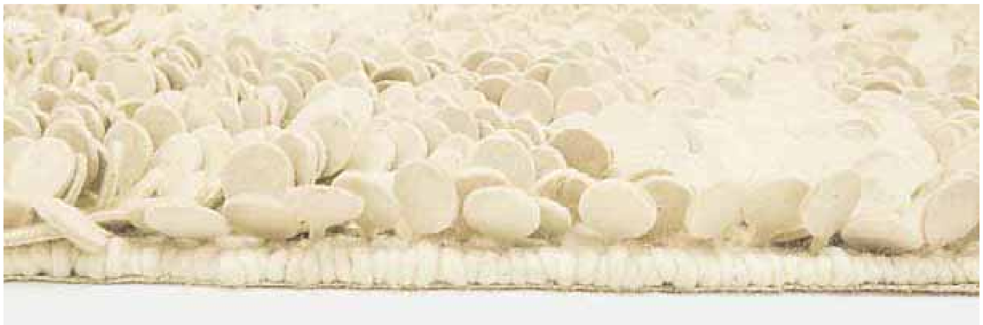
Product Briefs

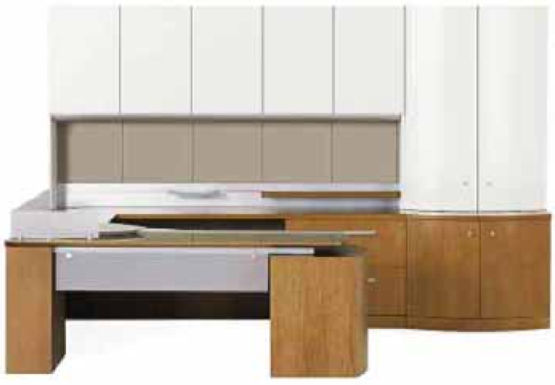


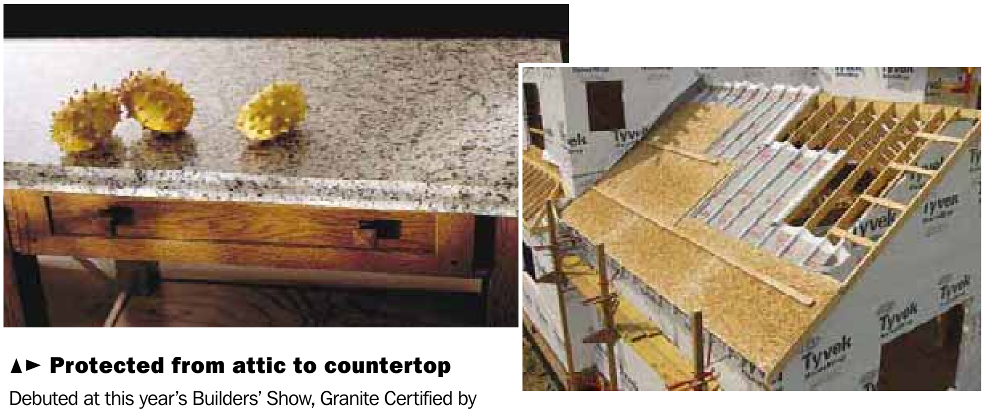
▲ Path of roses

Spanish-rug diva Nani Marquina offers a range of new products for 2006 from her eponymous company. Basic, a line of six collections that play with color and texture, offer the sophisticated style expected from the manufacturer but with more general appeal. For fans of avant-garde design, the company doesn't disappoint with Roses, a Marquina design made with felt die-cut "petals" that gives movement and softness to the rug. It is available in red, brown, ivory (above), orange, and gray. Offerings from collaborating designers include the Tomato Pouf seat and the Stone-Wool collection of blob-shaped wool area rugs. The Terence Conran Shop, New York City. www.nanimarquina.com **CIRCLE 212**

► Menu of workspace options

Designed by Richard Holbrook, the Menu case-goods platform offers 10 work-surface shapes and varied storage components that lend themselves to space-efficient configurations. All of Menu's materials and finishes may be optioned up or down to meet a range of budgets and reflect employee status within an organization. Menu's material palette includes satin aluminum structural elements; glass and marble floating worktops; and 3Form modesty panels, doors, and privacy fences. Gunlocke, Muscatine, Iowa. www.gunlocke.com **CIRCLE 213**





▲► Protected from attic to countertop

Debuted at this year's Builders' Show, Granite Certified by Dupont is the first all-natural stone surface from DuPont Surfaces. Available in 15 colors, the granite is protected by a proprietary sealant that fills in natural cracks, helps repel stains, and maintains the stone's natural hue. Also launched at the show is Tyvek AtticWrap, the first breathable roofing membrane to completely seal a home's building envelope. Specially targeted for the attic, the wrap creates a continuously airtight space that prevents air and water intrusion and helps conserve energy. DuPont, Wilmington, Del. www.granite.dupont, www.construction.tyvek.com **CIRCLE 214**

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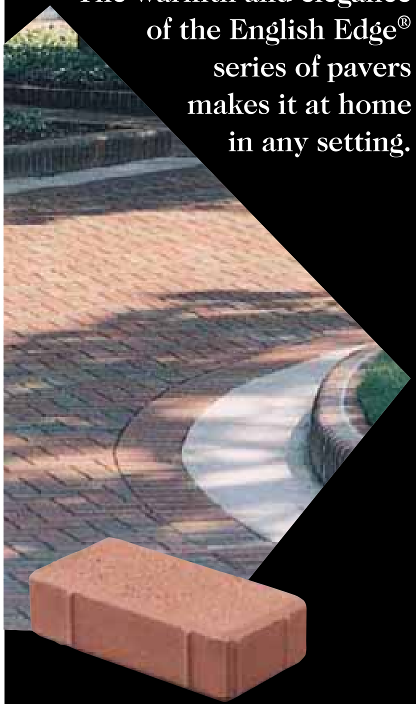

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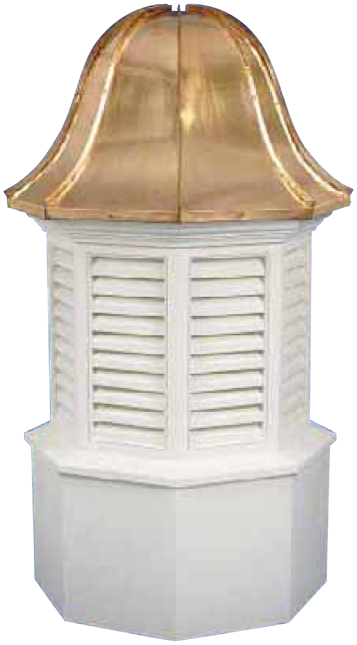
Product Briefs

► Steel framing system

The Building Components division of USG has introduced a new residential framing system as a modern alternative to traditional wood "stick" building methods. The light-gauge steel framing components, including roof trusses, wall panels, and floor panels, are factory manufactured to ensure precision and quality. The components can be incorporated individually or as a complete engineered framing system. After the components are delivered to the job site ready to install, small crews can frame a home in a fraction of the time it takes using traditional methods. Steel components are dimensionally more stable than wood and resist fire, mold growth, and termites. USG, Chicago. www.usg.com **CIRCLE 215**



▲ Cupola collection

The new William E. Poole Collection is a collaboration between Fypon and William E. Poole, a leader in American home design. The low-maintenance urethane Fypon pieces include a line of 25 ornamental cupolas ranging in height from about 5' tall to more than 7' tall. The low-maintenance cupolas are made of cellular PVC for the base and roof support, with the sill, crown molding, and louvers made of urethane. The designs include bell, pagoda, and hipped roof styles with the center portions including the decorative accents of louvers, glass, or wren birdhouses. Fypon, Archbold, Ohio. www.fypon.com **CIRCLE 217**

▼ Glass-reinforced gypsum panels

Chicago Metallic has expanded its line of Monarch GRG ceiling panels to include six new patterns. In total, the classically sculptured, glass-reinforced gypsum panels are now available in 12 decorative profiles, including the new Executive Wood Mahogany, Centennial, Bamboo, Classic Wood Mahogany, Victorian Poppy, Palm Leaf, and Classic Textured patterns. Monarch panels help create artistic ceilings ideal for the hospitality market or any room seeking a dramatic or historic appeal. The panels, approved by the U.S. Coast Guard for marine applications, are unaffected by moisture and humidity. Chicago Metallic, Chicago. www.chicagometallic.com **CIRCLE 216**

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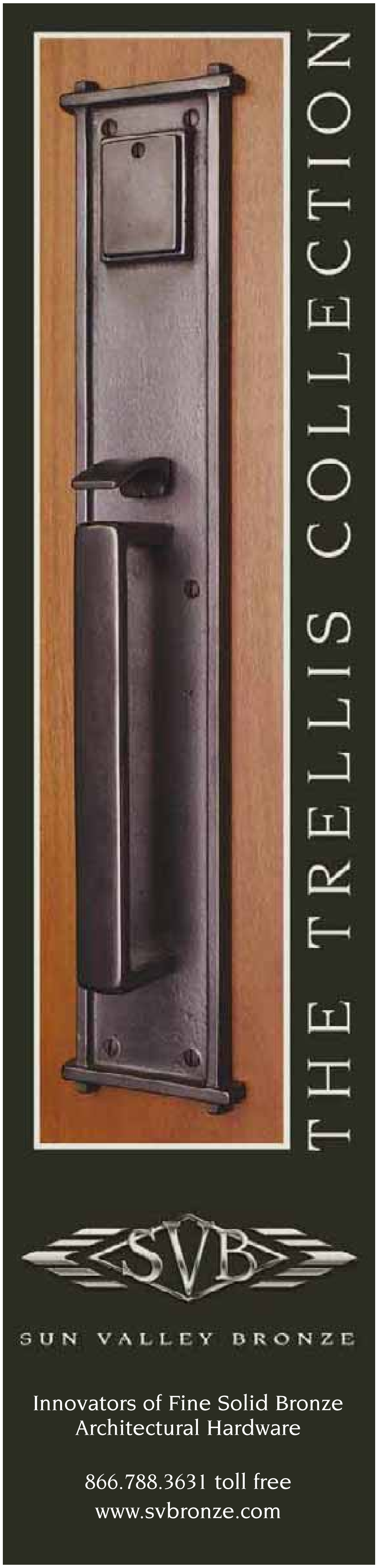

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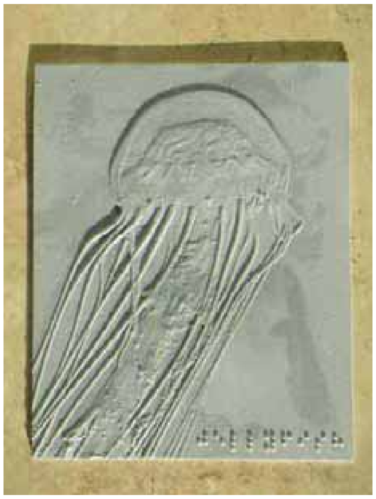
Product Briefs

▼ Fire-resistant particleboard

Temple-Inland has introduced TemStock-FR, a fire-rated particleboard for interior usage in industrial and commercial construction projects. Combining the cost-efficiency and versatility of particleboard with the fire-retardant properties required by commercial construction codes, TemStock-FR is an option for fabricating cabinets, fixtures, furniture, and various types of wall-system assemblies typically used in schools, offices, hospitals, and other commercial structures where fire safety is a primary concern. The particleboard is manufactured in thicknesses of ¼" through 1⅛" and in standard 4' sizes. Temple-Inland, Diboll, Tex. www.templeinland.com **CIRCLE 218**

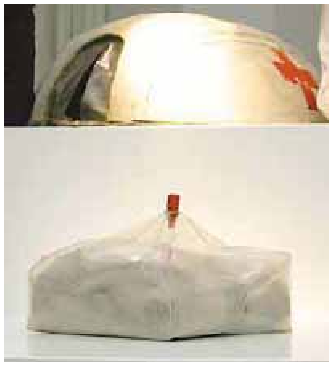
► It's stainless, but it's not steel

The result of nearly three years of intensive R&D, NuCrete is a stainless concrete now available from the precast-concrete experts at Sonoma Cast Stone. Made of actual concrete (not an epoxy-covered surface), Nucrete can withstand the harshest acids and oils and is offered with a five-year guarantee against staining. It is created by modifying concrete's traditional curing and finishing process and introducing some proprietary additives to the batch mix and finish. Sonoma Cast Stone products are available through a network of more than 100 authorized dealers around the country. Sonoma Cast Stone, Petaluma, Calif. www.sonomastone.com **CIRCLE 219**



◄▼ Creativity that can change the world

The Saatchi & Saatchi Award for World Changing Ideas promotes inventions that have the potential to change the world. The 11 finalists in the fourth annual competition included Photo-Form Tactile Graphics [RECORD, October 2004, page 233] that allow "pictures" to be seen by a blind person's touch (far left). The $100,000 grand prize was given to Peter Brewin and William Crawford of London's Royal College of Art for Concrete Canvas, a rapidly deployable hardened shelter for victims of natural or man-made disasters (model, near left top; undeployed shelter, bottom). Saatchi & Saatchi, New York City.www.saatchi.com/worldwide/innovation_award.asp **CIRCLE 220**



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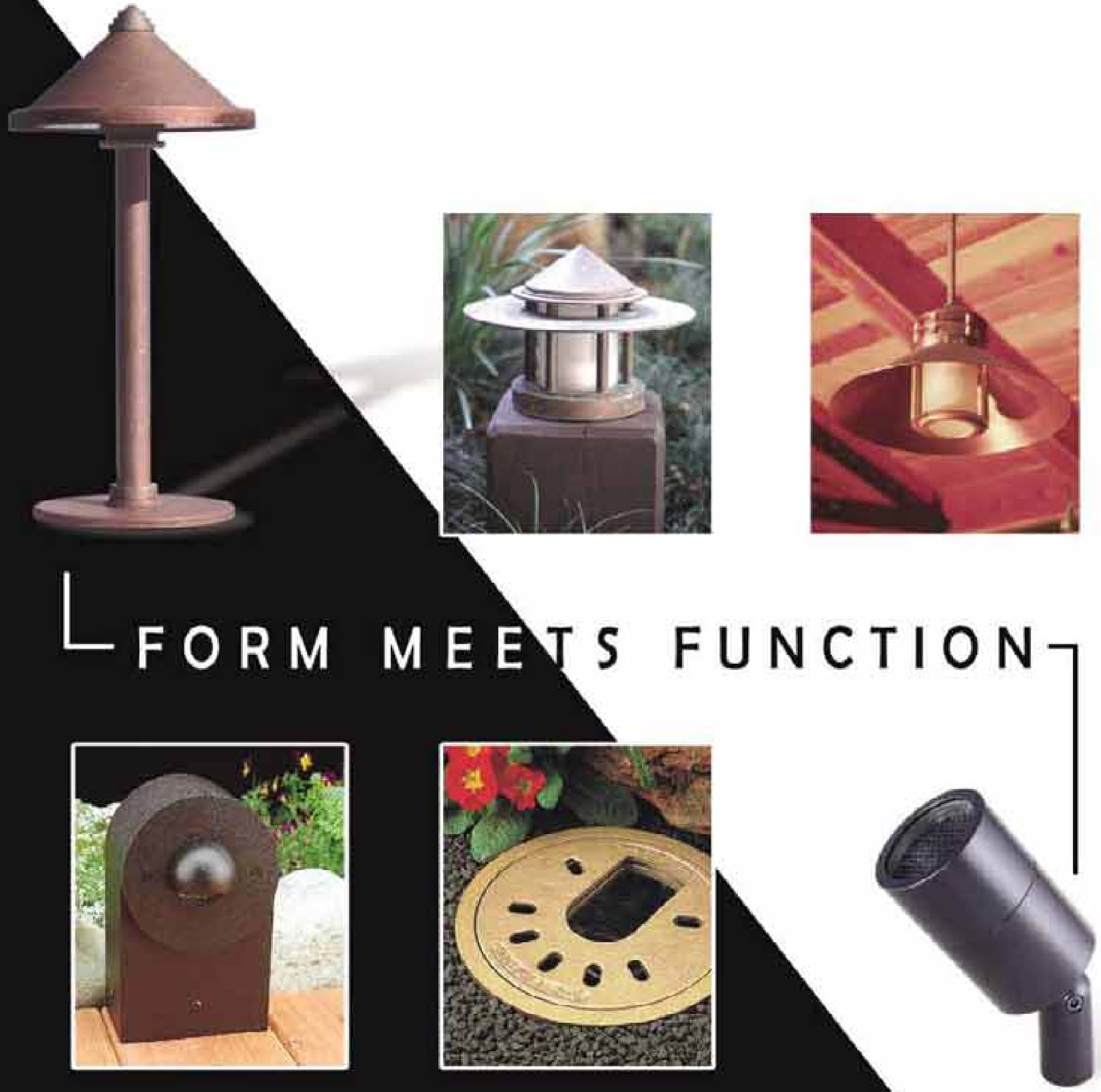

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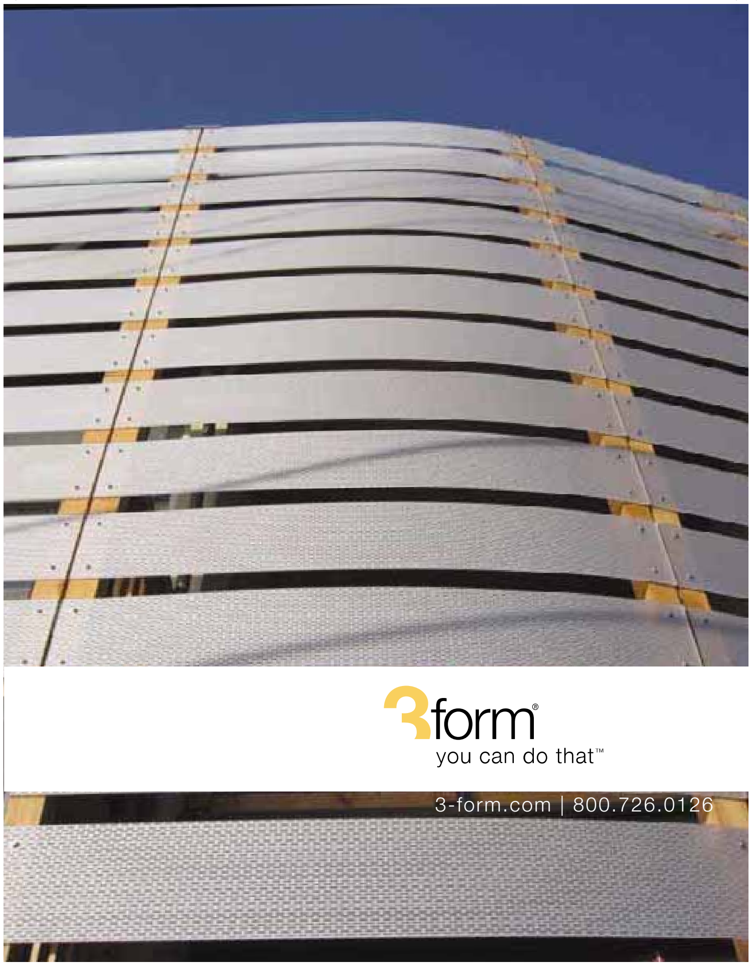

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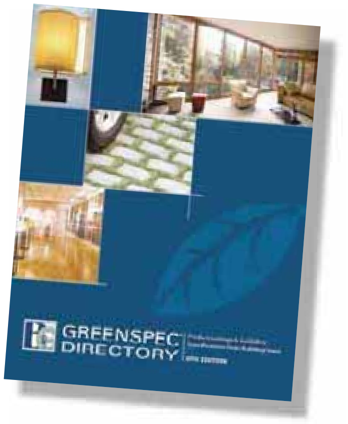
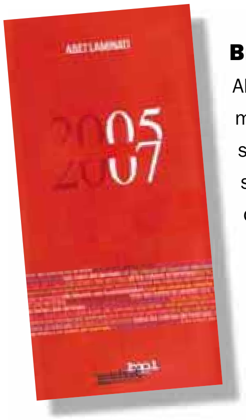


Green building products guide

The expanded and revised 6th edition of the *GreenSpec Directory* of environmentally preferable building products contains nearly 2,000 listings, providing a complete source for green building product information. The directory includes 1,997 product listings—more than 200 product listings were added and 100 were dropped from the last edition. BuildingGreen, Brattleboro, Vt. www.GreenSpec.com **CIRCLE 221**



Brochure of laminate designs

Abet Laminati is offering a new brochure describing more than 500 decorative, high-pressure-laminate surfaces, including metallics, wood grains, textures, solid colors, digitally printed or silk-screened designs, and Diafos translucent designs. All products are stocked in five locations throughout North America. Abet Laminati, Englewood, N.J. www.abet-laminati.com **CIRCLE 222**

Greener ceilings catalog

Armstrong's 2006 *Ceilings Systems* catalog places an increased emphasis on green issues. The mineral fiber/fiberglass sections include a chart indicating the ceiling's ability to help attain LEED credits, and the catalog is printed with vegetable-based inks on paper made from hydrogenerated energy and approved as an FSC "chain of custody" stock. Armstrong World Industries, Lancaster, Pa. www.armstrong.com/ceilings **CIRCLE 223**

Hardwood sports floor catalog

A new, 12-page catalog from Action Floor Systems details the company's extensive line of hardwood sports systems. The 2006 catalog features two new systems along with specifications for 16 other subfloor systems that are designed to absorb shock, provide uniform resiliency and ball bounce, and reduce vibration and sound transmission. Action Floor Systems, Mercer, Wis. www.actionfloors.com **CIRCLE 224**

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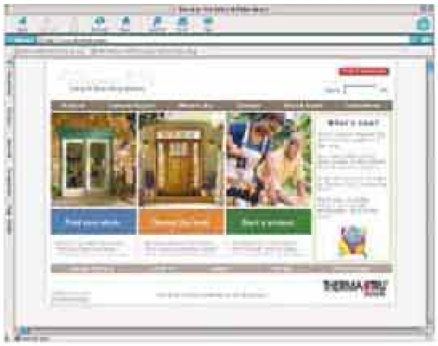
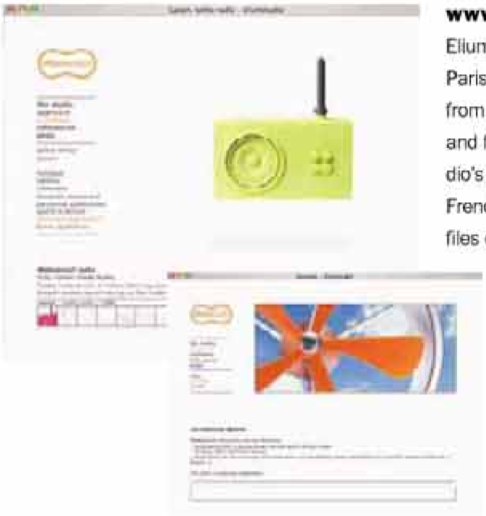
Product Resource: On the Web

www.thermatru.com

Therma-Tru Doors has redesigned its Web site to be more interactive, with customized navigation for consumers, builders, and architects. Visitors will see expanded content, easier navigation, a redesigned interface, an enhanced product catalog, and a more powerful search tool.



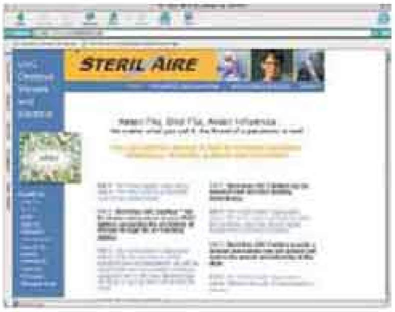


www.eliumstudio.com

Eliumstudio is a team of five, Paris-based product designers from the architecture, design, and fashion industries. The studio's easy-to-navigate site (in French and English) gives profiles on the team members as well as examples of their work in furniture, lighting, tableware, domestic equipment, personal accessories, consumer electronics, home appliances, and more.

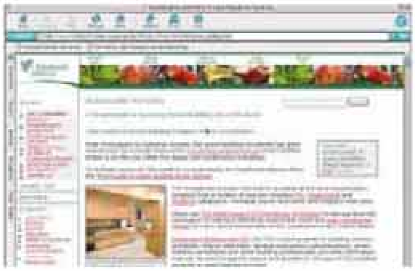
www.uvckillsbirdflu.com

A topical new Web site from Steril-Aire discusses how the company's ultraviolet-C (UVC) technology may be used preventively to control the spread of bird or avian flu in residences and buildings of all types. The site includes sections on frequently asked questions, applications, and products.



www.rainforest-alliance.org/greenbuilding

The Rainforest Alliance has compiled the *SmartGuide to Green Building Wood Sources*, a comprehensive listing of all Forest Stewardship Council–certified suppliers in North America, including contact, company, and product information. The *SmartGuide* can be downloaded for free at the Rainforest Alliance site listed above.



Loyalist College, Belleville, Ontario, Canada; Architect: Stephen Teeple Architects, Toronto, Ontario, Canada;
Flat Lock Interlocking Wall Tiles; Fabrication and Installation: Semple Gooder, Toronto, Ontario, Canada

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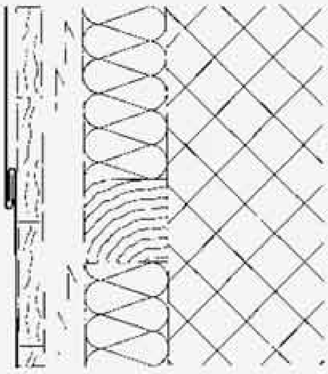

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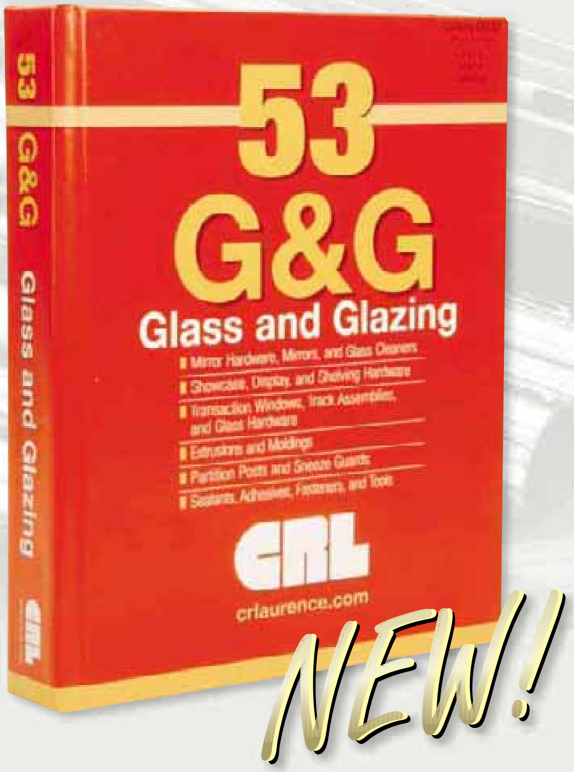
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connecting people_projects_products

Norbert W. Young Jr., FAIA
President, McGraw-Hill Construction

The Connection Goes Live.

McGraw-Hill Construction's proven ability to connect the construction industry to vital information has just become a lot more powerful

By Roger Yee

"The world has changed! The Network for products sets new standards for connecting people, projects and products."

Every industry has its trusted sources. For architects, contractors, and building product manufacturers, the industry-leading brands of McGraw-Hill Construction—Dodge, Sweets, *Architectural Record*, *ENR*, and our Regional Publications-have been the preferred connection to vital information for over a century. Sweets, for example, has defined professional standards for building product information since 1906, and is now taking a quantum leap forward as McGraw-Hill Construction harnesses the power of online technology and launches the McGraw-Hill Construction Network® for products.

"The world has changed," declares Norbert Young, president of McGraw-Hill Construction. "The new Network for products continues our evolution of transforming the global construction industry by setting new standards through connecting people, projects and products. Architects, contractors and building product manufacturers will find it's built for them, because they helped us build it, through months of interviews, surveys, and research."

The Network for products is built on the 100 year history and integrity of Sweets. Today, however, the Network for products goes far beyond what was provided in the past. It offers a new industry standard for researching, finding, comparing, specifying and purchasing building products, and collaborating with industry associates.

All told, the Network for products is like no other product resource available today. From the look and feel of the site to its ease of navigation and rich content in context, the Network for products was designed with your needs in mind.

A community thrives when everyone contributes to and gains from its group activities. For architects, contractors, and building product manufacturers, that community now exists in the McGraw-Hill Construction Network for products. You'll enjoy a whole, new, personalized web experience from McGraw-Hill Construction—accessing product catalogs, detailed specifications, CAD drawings and project galleries from more than 10,000 manufacturers, and the ability to download information into your own "workspace" right on the Network.

"Now it's easier than ever for architects to research products and evaluate them in an architectural context."

Architects are passionate about expanding humanity's visions of form and function. However, they're cautious about the building products they choose to transform visions into construction. They have to be. Building products can make or break your projects, so you want the best options

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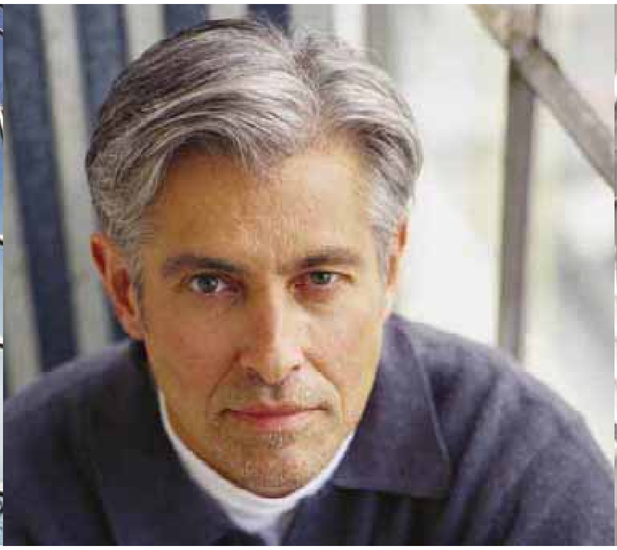

available. Here's where the Network for products will make a dramatic difference. “Architects are intellectually curious,” observes Dora Chomiak, senior director, product development, for McGraw-Hill Construction. “The Network for products lets them research products their way, doing it faster, more easily, and more accurately.” We've even incorporated *Architectural Record's* Building Types Studies to enhance the user's experience and allow greater depth of information and intelligence.

If you're a contractor, you may already use the McGraw-Hill Construction Network to find, bid, and win projects. “The McGraw-Hill Construction Network lets you work continuously on your project using the same platform where you located it,” states Joseph Scott, marketing director, Contractors & Services channel, for McGraw-Hill Construction. “Yet continuity is just one of its benefits. Using its product search engine, you can quickly and easily identify options for the building products the architect is specifying, learn how they're installed and operated, and then get practical answers to that inevitable question: Where can I find suppliers to get this stuff to me?”

> “This represents an unparalleled way for industry players to connect to one another and to projects and products in a whole new way.”

Building product manufacturers will benefit by reaching a robust audience of end users with the deeper, richer content they need to make product decisions. Better yet, you'll monitor all requests for your product information in real time using a new Performance Dashboard created expressly for you. Per Lofving, senior director, product development, for McGraw-Hill Construction, points out, “If you've been looking for a cost-effective way to deliver information about your products directly to architects with projects that could use your products, and maintain communications with them to make sure you win the order, you've got it now.”

The power of this new offering is its integration with our McGraw-Hill Construction Network. One powerful, industry portal enables you to find, research, compare, specify, and purchase building products, collaborate with the people who make, specify, and use building products, and identify the projects they are supplying, designing, and constructing - faster, better, and smarter. In short, the power is in the connections this new offering provides.

The portal is open, and everyone is invited. Extending a warm invitation to the construction industry to put this powerful new tool to work, McGraw-Hill Construction's Norbert Young says, “Check out our new Network for products by going to:

www.products.construction.com

Network for products
search
browse
quick links
products
projects
people

Roger Yee is an architect and writer living in New York

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Dates & Events

New & Upcoming Exhibitions

Julius Shulman, Modernity and the Metropolis
Washington, D.C.
April 1–July 30, 2006
This exhibition offers highlights from the recently acquired archives of Julius Shulman, the internationally renowned photographer whose iconic images helped to define Modern architecture. His photographs, such as those of Richard Neutra's Kaufmann House in Palm Springs (1947) and Pierre Koenig's Case Study House #22 in the Hollywood Hills (1960), transcend mere documentation of steel and glass. They reveal the essence of the architects' visions and capture the spirit of the eras when the structures were conceived. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Between Form and Circumstance: Re-Thinking the Contemporary Landscape
Cambridge, Mass.
April 3–May 24, 2006
An exhibition of the recent practice of Michael Van Valkenburgh Associates. At Harvard University Graduate School of Design. Visit www.gsd.harvard.edu.

Secret Cities: Extraordinary Urban Photography
Chicago
April 14–June 17, 2006
The contemporary photographers in this exhibition are poets of light and shadow unlike many architectural photographers. Included in the show are works by Christophe Valsecchi, John Kimmich-Javier, Darris Lee Harris, Alex Fradkin, Jay King, Tony May, and Madeline Doering. At ArchiTech. For more information, call 312/475-1290 or visit www.architechgallery.com.

Vaults of Heaven: Sanctuaries of Byzantium
New York City
April 26–July 28, 2006
An exhibition of 30 large-format color photographs of some of the greatest examples of Byzantine architecture. Captured by the renowned Turkish photographer and architect Ahmet Ertug, the striking images reveal in astonishing detail the extraordinary churches and sanctuaries of ancient Byzantium. At the World Monuments Fund Gallery. For additional information, call 646/424-9594 or visit www.wmf.org.

Ongoing Exhibitions

On-Site: New Architecture in Spain
New York City
Through May 1, 2006
Featuring 53 noteworthy architectural projects, this exhibition focuses on the most recent architectural developments in a country that has become known in recent years as an important center of international design experimentation and excellence. At the Museum of Modern Art. Call 212/708-9431 or visit www.moma.org.

Prairie Skyscraper: Frank Lloyd Wright's Price Tower
New Haven
Through May 5, 2006
Marking the 50th anniversary of the completion of the celebrated landmark Price Tower, the Price Tower Arts Center has mounted this exhibition comprising documents, drawings, furniture, building components, and other artifacts that bear witness to the genius of its architect. At the Yale School of Architecture. For information, call 203.432.2288 or visit www.architecture.yale.edu.

Symmetry
Los Angeles
Through May 7, 2006
In the world of space and time, symmetry derives its meaning from a center, a repetition of forms on mirroring sides of an axis. This exhibition features works by Los Angeles-based contemporary artists that use or relate to this concept. At the MAK Center for Art & Architecture L.A., at the Schindler House. Call 323/651-1510 or visit www.makcenter.org.

Open: New Designs for Public Space
Chicago
Through May 7, 2006
The Chicago Architecture Foundation investigates the evolving conditions of public space in Chicago—from the spectacular Millennium Park to the development of streets and gardens in city neighborhoods—with more than 300 architectural renderings, photographs, and models. At the ArchiCenter. Call 312/922-3432 visit www.architecture.org.

Hiroshi Sugimoto
Washington, D.C.
Through May 14, 2006
The first career survey of one of Japan's most important contemporary artists. Sugimoto is known for his starkly minimal images of architecture, seascapes, and movie theaters, as well as his richly detailed photographs of natural history dioramas, wax portraits, and Buddhist sculptures. At the Smithsonian Hirshhorn Museum and Sculpture Garden. For more information, call 202/633-1000 or visit www.hirshhorn.si.edu.

Southpoint: From Ruin to Rejuvenation—ENYA International Ideas Competition Exhibition
New York City
Through June 17, 2006
The Emerging New York Architects (ENYA) Committee presents an exhibition of the second biennial international ideas competition. The exhibition features 77 visions for a Universal Arts Center at Southpoint Park on Roosevelt Island. ENYA Prize recipient, second place, third place, student prize, and historic preservation award, along with 42 selected entries, are included in the accompanying catalog. At the Center for Architecture. For more information, call 212/683-0023 or visit www.aiany.org.

Morphosis
Paris
Through July 17, 2006
Sixteen projects (layouts, drawings, photographs, etc.) from the Morphosis agency, currently involved in the construction of numerous buildings, are on view to convey the idea of architecture as "in the act." Screens and Webcams will open windows onto buildings in operation or building sites underway in order to follow their evolution. At the Centre Pompidou. Visit www.cnac-gp.fr/pompidou.

Lectures, Conferences, and Symposia

Harvard Graduate School of Design Lecture Program
Cambridge, Mass.
The Graduate School of Design's (GSD) lecture program presents internationally prominent speakers in the design fields. They are invited to share their work and ideas with the GSD community, thus providing insight into contemporary professional practice and scholarship. Speakers include Ricky Burdett, Luis M. Mansilla, Holly Gretch Clarke, Jan Kaplicky, Bjarke Ingels, Jean Nouvel, Jorge Silvetti, Terence Riley, Nathalie de Vries, Julie Snow, Katrin Scholz-

Barth. At Piper Auditorium. For additional information, visit www.gsd.harvard.edu.

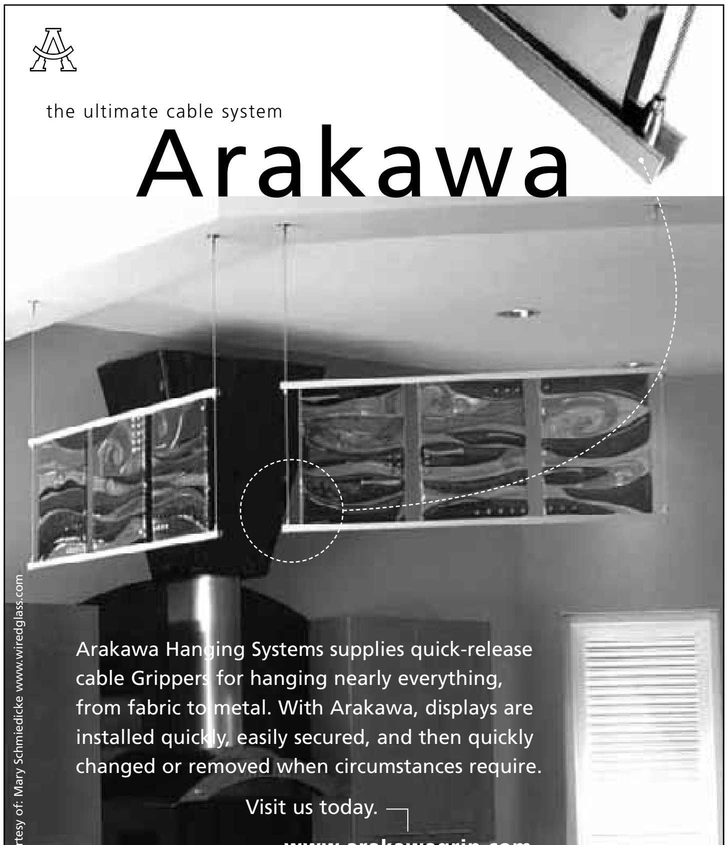
Spotlight on Design: Emerging Voices: dECOi/George Yu Architects
Washington, D.C.
April 5, 2006
Mark Goulthorpe, founding principal of dECOi in Paris, France, and Cambridge, Massachusetts, will present his firm's work, ranging from pure design to architecture and urbanism. Los Angeles-based George Yu will discuss, among other projects, the creative workspaces of the Sony Design Centers in Los Angeles and Shanghai. Both architects were selected as "emerging voices" by the Architectural League in New York. At the National Building Museum. To learn more, call 202/272-2448 or visit www.nbm.org.

Symposium: Women in Architecture: Three Tracks to Success
Washington, D.C.
April 6, 2006
According to the American Institute of Architects (AIA), women comprise only 12 percent of AIA members but over 40 percent of students now enrolled in architecture schools. Three successful principals of women-owned architecture practices—Suman Sorg, FAIA, principal of Washington, D.C.–based Sorg Associates; Joan Goody, FAIA, principal of Boston-based Goody, Clancy & Associates; and Carol Ross Barney, FAIA, principal with Chicago-based Ross Barney + Jankowski—will discuss their careers in a profession where the number of women is on the rise. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Alexander Garvin, Edward Uhlir, Charles Renfro
Chicago
April 6, 2006
From Chicago's own Millennium Park to master plans for the Olympic Games, new projects are redefining how we approach public space. Three designers and organizers of event and public spaces come together at the Chicago Architecture Foundation (CAF) for a dialogue on the future of public space. Panelists include Alexander Garvin, Alex Garvin & Associates, New York; Edward Uhlir, project director, Millennium Park, Chicago; and Charles Renfro, Diller Scofidio + Renfro, New York. With moderator Ned Cramer, curator, CAF. At the John Buck Company Lecture Hall Gallery. Call 312/922-3432 or visit www.architecture.org.

Sustainable Design Seminar: Sustainable Strategies/Rating Systems
Long Island City, N.Y.
April 8, 2006
In this one-day course, students will learn how sustainable materials and renewable energy strategies are integrated into the building design process. Instructors will also review current green building rating systems. The course is led by ARUP consultant Shruti Narayan and Jamy Bacchus, both of whom are LEED-accredited engineers and sustainability consultants. Learn the feasibility and applicability of the current green building rating systems, including LEED, LABs 21, and Greenglobes. At NYDESIGN Design Business Center. Visit www.nydesigns.org.

3X3
New York City
April 17, 2006
A monthly lecture series that brings together Chinese and internationally recognized scholars, artists, and architects to present research and projects focusing on the development of today's China. The series creates a perspective and background, through analyzing the impact of the country's past, pres-



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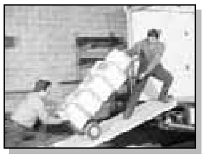
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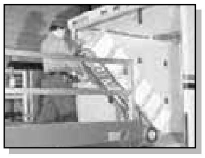
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ent and future. At the Center for Architecture. Visit www.aiany.org or www.peoplesarchitecture.org.

Spotlight on Design:
Rem Koolhaas
Washington, D.C.

April 28, 2006

The architecture of Rem Koolhaas is recognized worldwide for combining technology, function, and design in groundbreaking ways. In his first lecture in Washington since 1996, the founding principal of the Rotterdam-based architecture firm Office of Metropolitan Architecture (OMA) will discuss his recent and current projects—including store designs for Prada, the Seattle Public Library, the McCormick Tribune Campus Center at the Illinois Institute of Technology, and the CCTV Television Station and Headquarters in Beijing—and share his views on the current state of architecture. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

The Architecture of
Sustainability
Shepherdstown, W.Va.

May 4–7, 2006

With renewed interest in the environment, many questions arise as to what extent architecture plays a role in green design. This three-day conference will consider the impact of sustainability on architectural design from several perspectives. Speakers will include Jeanne Gang of Studio Gang, James Timberlake, FAIA, of Kieran Timberlake, Andrew Whalley of Grimshaw, and others. Also, the winners of the Design Ideas Competition, "House for an Ecologist," will be on view. At the National Conservation Training Center (NCTC). For more information, visit www.aia.org/cod.

Competitions

AIA New York Chapter Design Awards 2006

Entry Deadline: April 14, 2006
Submission Deadline: May 5, 2006

The Design Awards Program seeks to recognize and promote design excellence in three categories: Architecture, Interior Architecture, and Projects. Visit www.aiany.org/designawards.

The SOM Prize

Deadline: April 28, 2006

Since 1981, the Skidmore, Owings & Merrill Foundation has helped young architects and engineers broaden their education through travel fellowships awarded annually. The $50,000 grant will be awarded to the most promising student in architecture, urban design, and design, as selected by an independent jury of prominent professionals. Graduating undergraduate and graduate students of accredited U.S. schools of architecture, urban planning, and design are eligible. Visit www.somfoundation.som.com.

Request for Expressions of Interest

Deadline: May 1, 2006

The Anacostia Waterfront Corporation (AWC) issued a Request for Expressions of Interest (RFEI) for the redevelopment of 47 acres of publicly owned land along the Southwest Waterfront that is slated to be transferred to AWC. The RFEI is an open invitation to qualified local, national, and international developers with experience in large-scale, mixed-use, retail, residential, and public/private development who are interested in redeveloping the site. For more information, visit www.swwaterfrontdc.com.

International Student Design Competition: Concrete Thinking for a Sustainable World

Deadline: May 3, 2006

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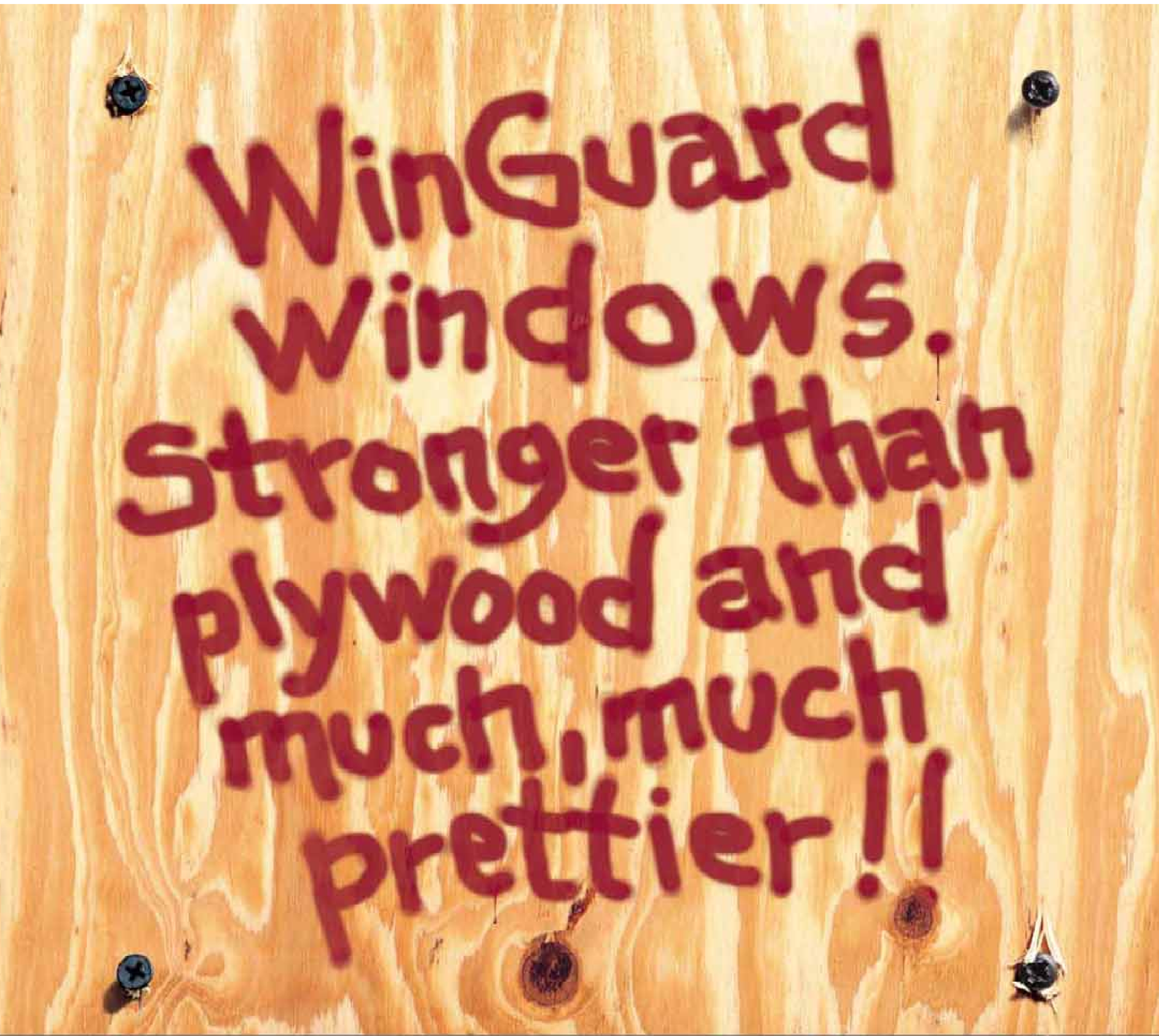
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Moisture occurs naturally in the unseen cavities behind residential brick walls. It can come from wind-driven rain, or from condensation. As a result, brick wall-cavities used to be breeding-grounds for the mold that can cause asthma and other illnesses, especially in children¹.

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Association (PCA) and administered by the Association of Collegiate Schools of Architecture (ACSA), students will be challenged to investigate an innovative application of portland-cement-based materials to achieve sustainable design objectives. The competition is open to all ACSA-affiliated schools. Visit www.acsa-arch.org.

2006 Benjamin Moore HUE Awards
Deadline: May 19, 2006
Presented by the Benjamin Moore company to honor architects and interior designers for exemplary use of color in both residential and contract projects, the awards recognize design professionals who incorporate color in innovative and imaginative ways—through the use of interior and exterior paints, building materials, textiles, and other surfaces, plus design elements and furnishings. Call 212/966-3759, x 233 or visit www.benjaminmoore.com.

Rafael Viñoly 2006 Research Fellowship
Deadline for Grant Proposals: June 1, 2006
Rafael Viñoly Architects is again offering fellowships to support original research that advances the craft and practice of architecture and can benefit from being carried out in the environment of an architectural office. Potential areas of research may include design methodologies, construction technologies, design representation and fabrication, materials technology, and sustainable design, or other topics. In addition to a stipend and research expenses of up to $60,000, Rafael Viñoly Architects will provide work space and support. Fellows are to be resident for terms of three to twelve months, between September 2006 and September 2007. For more information, visit www.rvatr.com.

Seattle Architecture Foundation Ideas in Form9 Architectural Model Exhibit
Seattle
June 9–July 8, 2006
Deadline for Entries: May 5, 2006
Seattle Architecture Foundation (SAF) uses its annual Ideas in Form architectural-model exhibition to educate the general public about the creative process. The show features 80 to 100 projects still on the boards, under construction and recently completed by Northwest architects or architects designing projects in the Northwest. This year's exhibition will be open daily June 9 through July 8 in the Rainier Square Atrium in Downtown Seattle, 1333 5th Avenue, First Level. Call 206/667-9184 or visit www.seattlearchitecture.org.

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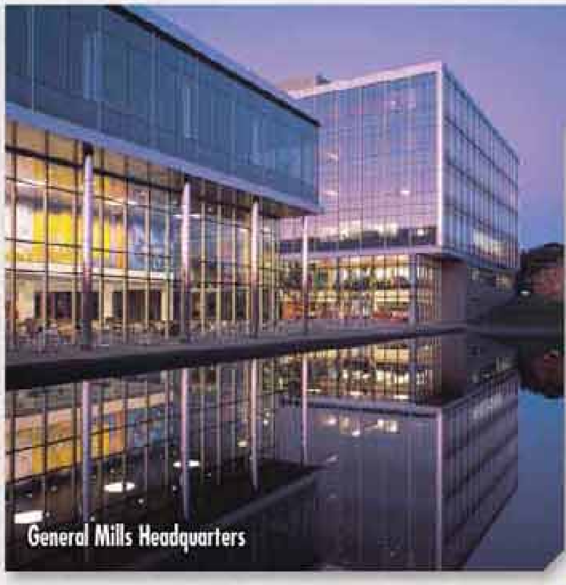
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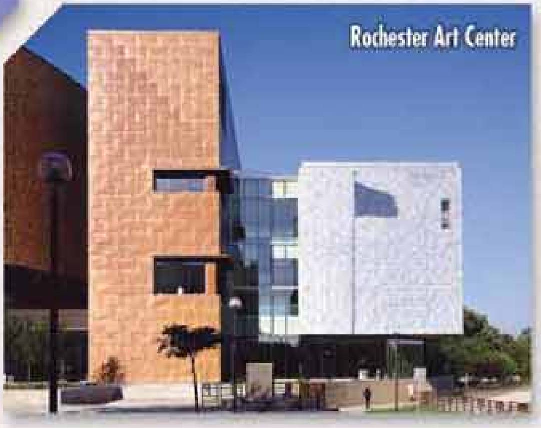
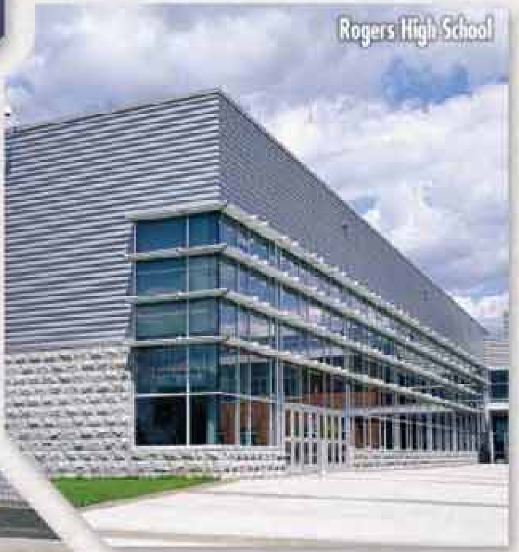

Rochester Art Center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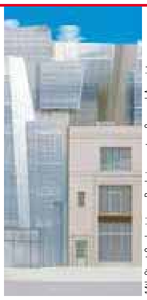

14th Street Condominiums. Rendering courtesy Sorg and Associates

Symposium
April 6
Women in Architecture: Three Tracks to Success
Suman Sorg, FAIA; Joan Goody, FAIA; and Carol Ross Barney, FAIA

Spotlight on Design
April 3
The SWA Group
Kevin Shanley, ASLA, president of SWA Group
April 26
Steve Martino, FASLA, landscape architect
April 28
Rem Koolhaas, architect

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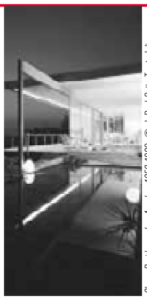
exhibitions



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Julius Shulman, Modernity and the Metropolis
through July 30

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Dates & Events

Campus Planning
Deadline: June 9, 2006
New England architects and planners are invited to submit college and university projects completed throughout the world, and architects and planners throughout the world are invited to submit New England projects. For more information, visit www.architects.org/awards.

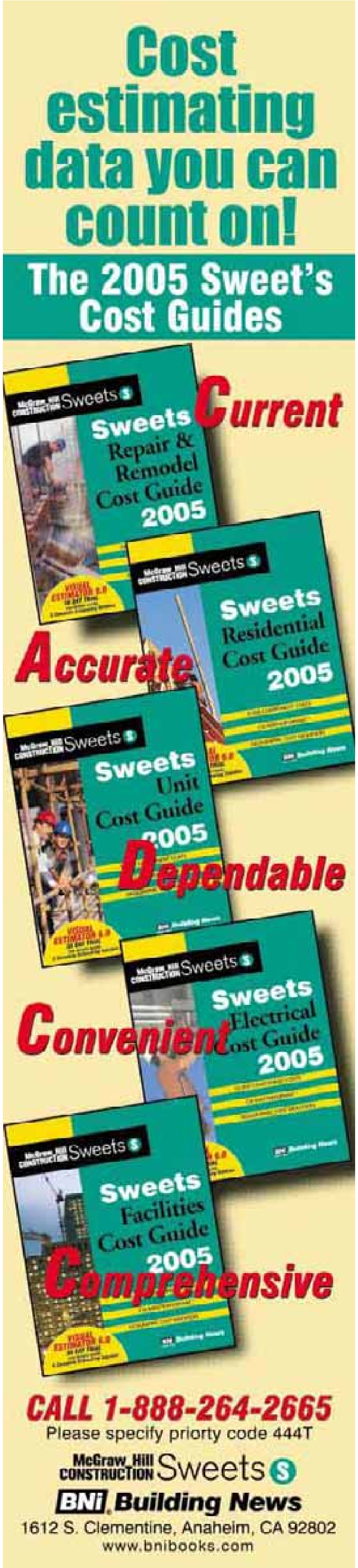
Unbuilt Architecture
Deadline: June 26, 2006
Architects, architectural educators, and architecture students throughout the world are invited to submit real or theoretical projects. Visit www.architects.org/awards.

The 2006 VIP Awards
Deadline: July 1, 2006
Since 2000, Vetter Windows & Doors has recognized projects that preserve and respect the time-honored tradition of quality custom building and master craftsmanship through the Vetter Inspired Project Awards (VIP). The VIP Awards is a national design competition open to any architect, custom builder, or remodeler in the United States that has used Vetter products. Call 800/838-8372 or visit www.vetterwindows.com.

Honor Awards for Design Excellence
Deadline: July 6, 2006
The annual Boston Society of Architects (BSA) honor awards program invites submissions of projects of any type anywhere in the world designed by Massachusetts architects and also invites architects throughout the world to submit projects built in Massachusetts. For more information, visit www.architects.org/awards.

Juried Photo Exhibits at Build Boston
Deadline: August 1, 2006
All New England architects, landscape architects, and interior designers who are members of the AIA, ASID, ASLA, or IIDA are eligible. For more information, visit www.architects.org/awards.

E-mail event and competition information two months before event or submission deadline to elisabeth_broome@mcgraw-hill.com.



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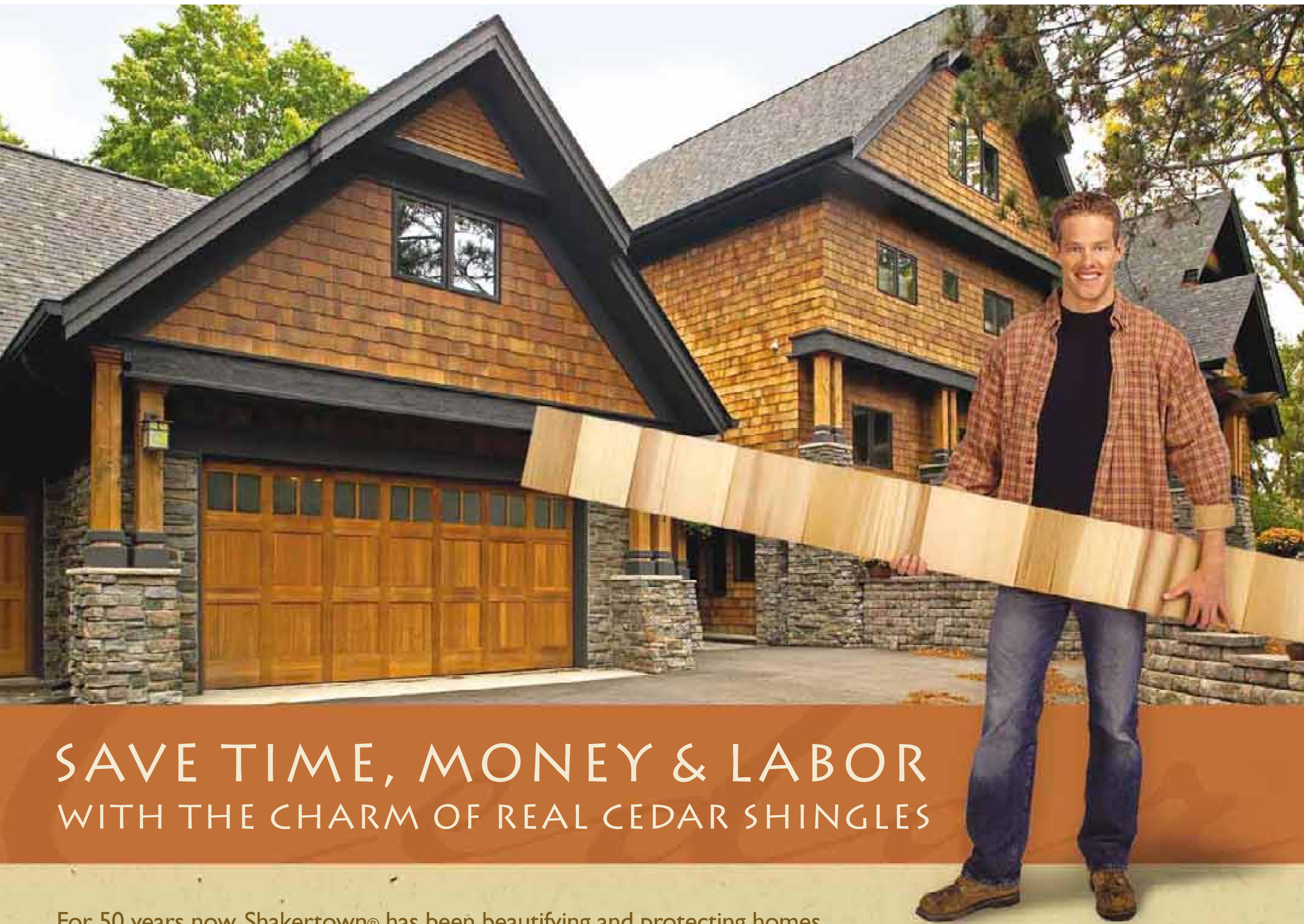

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Program title: "Robo Buildings: Pursuing the Interactive Envelope," Architectural Record (04/06, page 149). 046EDIT1

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2.	a	b	c	d	**7.**	a	b	c	d
3.	a	b	c	d	**8.**	a	b	c	d
4.	a	b	c	d	**9.**	a	b	c	d
5.	a	b	c	d	**10.**	a	b	c	d

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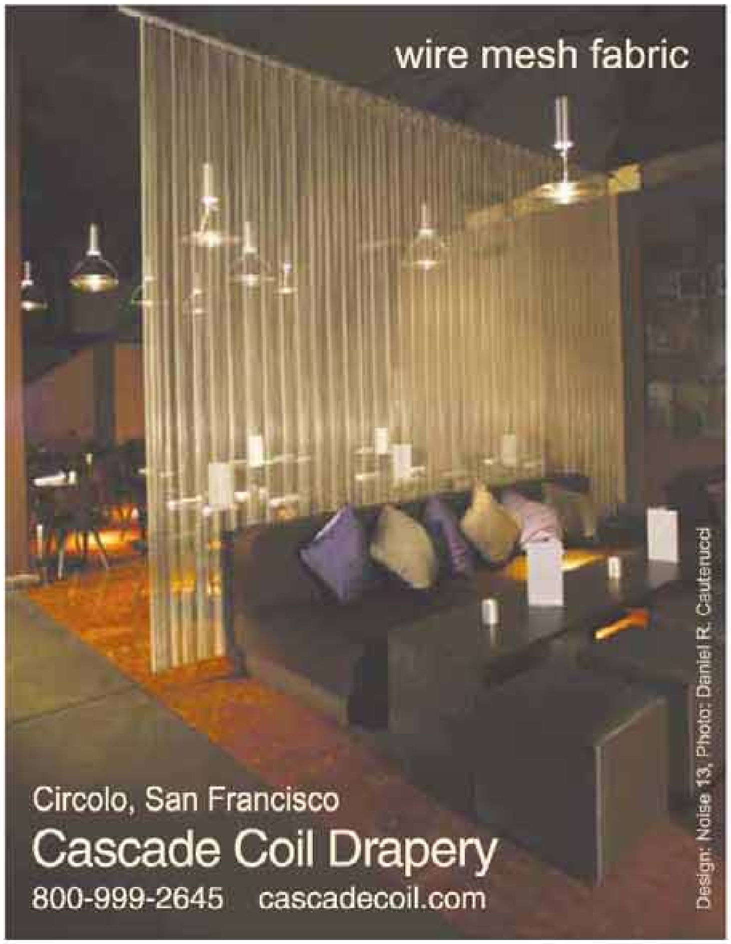
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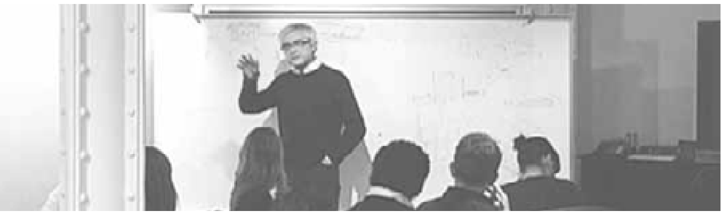

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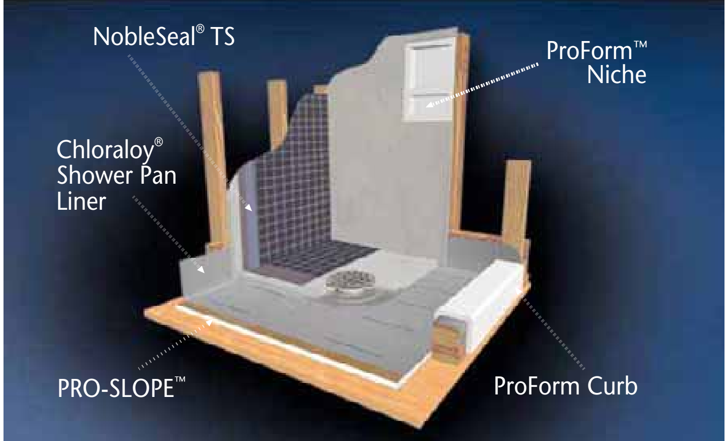

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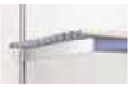

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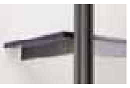
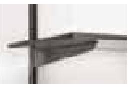


Rakks on Pole



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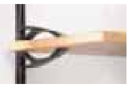

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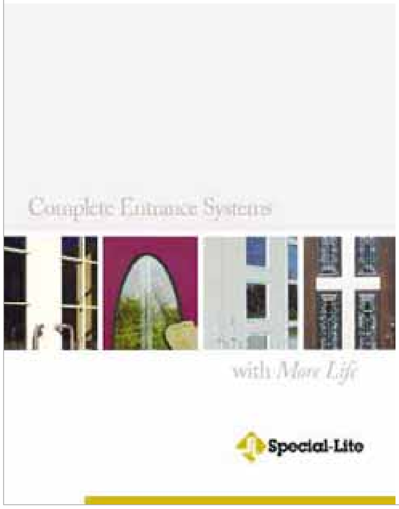

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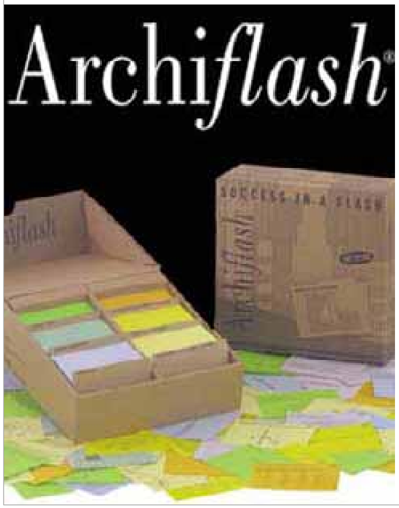

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| Circle Reader Service #151

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Stone Truss Systems, Inc.

red door spa

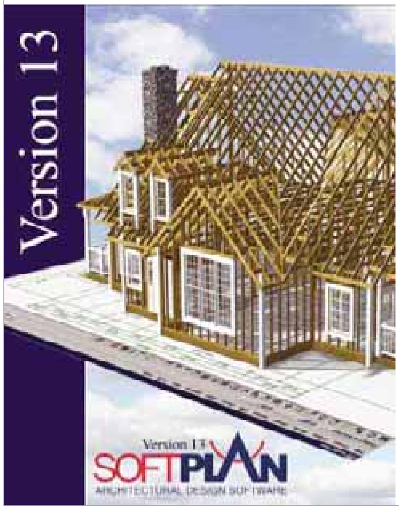
Thin lightweight natural stone wall cladding by THIN STONE SYSTEMS, LLC offers economical solutions for new construction and renovation, for both exterior and interior. Reinforced by a special patented process, the thin veneer panels of natural granite, marble, or limestone are applied to a structural framing system of extruded aluminum. Weighing only 6-lb. psf, the wall system provides many advantages including speed and simplicity of installation.

212-838-7667
www.thinstonesystems.com

| Circle Reader Service #154

Architectural Design Software

SoftPlan Architectural Design Software



SoftPlan is the industry's leading residential CAD software package. Now on its 13th release, SoftPlan allows architects and builders to create house plans in a fraction of the time taken to draw by hand or using a conventional CAD package. Using the latest technology, SoftPlan gives the flexibility to create complex, custom drawings with speed, accuracy, and ease. Quickly and easily create floor plans, elevations, cross-sections, photo-realistic 3D renderings, material lists, and more!

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www.softplan.com

| Circle Reader Service #152

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Vermont Structural Slate Company

Since 1859, Vermont Structural Slate Company has quarried and fabricated top-quality natural Vermont slate. They specialize in custom architectural projects and are proud to have supplied honed green slate flooring to the new Museum of Modern Art in New York. Call for their new brochure and boxed full range of 30 stone samples.

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Vertical Surfacing

Gage Corporation, Inc.

GageMetal®: An innovative collection of 16 designs suitable for walls, elevators and column covers. Standard sizes 48-in. by 96/120-in. with available thicknesses from .025-in. aluminum to 16 gauge stainless steel. Custom design and collaboration is available. Email gage@centurytel.net

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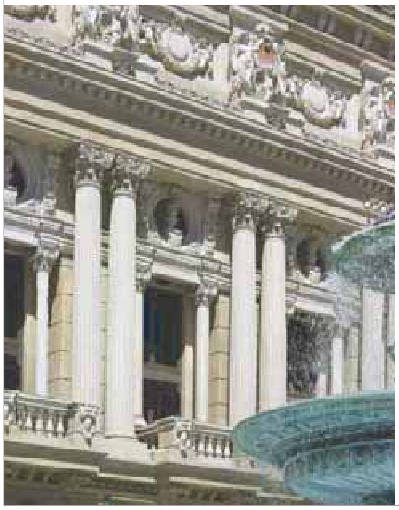
www.gageverticalsurfacing.com
HD Booth #3809

| Circle Reader Service #156

Columns, Balustrades and Cornices

Melton Classics, Inc.



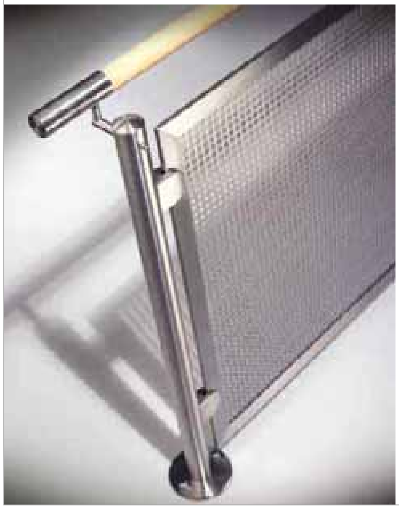
Melton Classics provides the design professional with the most comprehensive selection of quality architectural products in the industry, including architectural columns, balustrades, mouldings, cornices, and a wide array of architectural elements. Architectural columns are available plain or fluted, load-bearing or column covers, round or square in fiberglass, fiberglass/marble composite, synthetic stone, cast stone, GFRC, and wood for paint or stain. Melton Classics offers maintenance-free balustrade products ideal for any application.

800-963-3060
www.meltonclassics.com

| Circle Reader Service #159

Pre-Engineered Railings

Handrail Design, Inc.



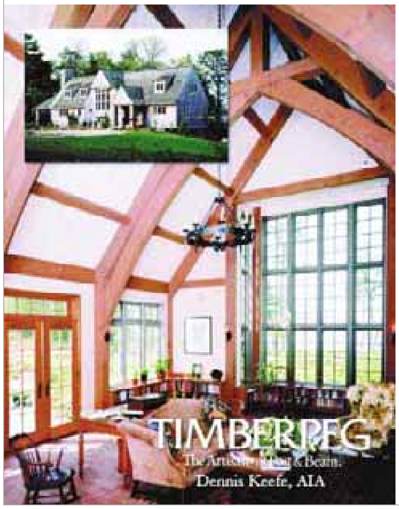
CIRCUM™ stainless railing system: Manufactured of corrosion-resistant stainless steel, CIRCUM is ideal for interior or exterior applications in commercial and residential facilities. Infill panels available in, but not limited to, perforated stainless steel, tempered glass, and stainless steel rods. Handrails in wood/stainless, stainless, or colored nylon. Curved rails and custom designs are available. HDI Railing Systems. Email info@hdirailings.com

717-285-4088
www.hdirailings.com

| Circle Reader Service #157

Timber Frames

Timberpeg



Using the highest available grades of eastern white pine and Douglas fir, Timberpeg® planes and pre-cuts the timbers; can pre-finish, chamfer and carve; and supplies all the parts so the frames are quickly assembled in the field. Since 1974, Timberpeg® has assisted architects in hundreds of residential and non-residential projects. By designing the needed joinery, supplying shop drawings, and being responsible for timber frame engineering, Timberpeg® can save the architect valuable time and money. Email info@timberpeg.com

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www.timberpeg.com

| Circle Reader Service #160

Wood Mouldings

Architectural Products by Outwater, LLC

Outwater introduces Wood Plus, a new line of decorative mouldings that afford the look, quality and elegance of the finest plaster and wood mouldings at the cost of inexpensive, unfinished pine mouldings. Comprising a premium grade, solid wooden core, Wood Plus is fused with a durable, smooth polymer bonding that can be painted, glazed or faux finished without priming. Offered in a variety of designs ranging from simple to highly ornate, Wood Plus will augment the beauty and refinement of any room. Sold in 9-ft. lengths, quite simply, there is no minus to Wood Plus!

800-835-4400
www.outwater.com

| Circle Reader Service #158

Slate Countertops

Evergreen Slate Co., Inc.

The rich depth and warmth created by the texture of natural slate provides a comforting feeling to interior spaces. Kitchen and bath countertops, sinks and backsplashes are available in 9 colors and 6 edge profiles. All slate products are anti-bacterial and stain-resistant. A honed finish provides a luxuriously smooth surface.

866-USA-SLATE
www.evergreenslate.com

| Circle Reader Service #161

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deidre_allen@McGraw-Hill.com

Slate Composite Shingles

Lamarite© by TAMKO©

Lamarite Slate Composite Shingles by TAMKO offer all the beauty of slate without the high cost and performance issues. Lamarite shingles are made from innovative composite materials that are robust, fire-resistant, and enduring. The shingles are available in four classic colors in 5-, 7- and 12-in. widths and offered with a 50-year limited warranty.

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www.tamko.com

| Circle Reader Service #162

Translucent, Clear Etched Glass

Goldray Industries

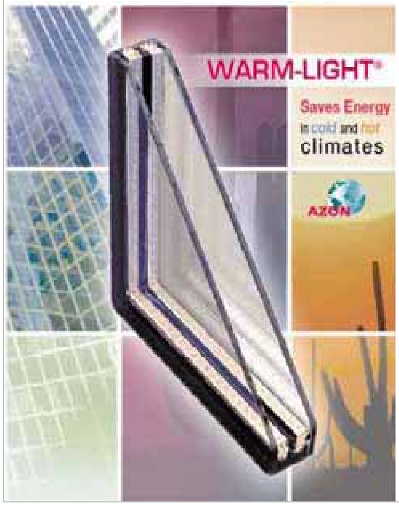
Satin Etch is a translucent clear glass with a light diffusing surface which provides privacy while still allowing high light transmission. The surface is both easy to clean and stain resistant. Satin Etch is ideal for applications such as room dividers, balustrades, light diffusing panels, shower enclosures and glass flooring systems. This product can also be decorated with custom graphics viewable from both sides. Visit the Goldray Industries web site.

800-640-3709
www.goldrayindustries.com

| Circle Reader Service #165

Extreme Performance Commercial Insulated Glass

AZON USA Inc.



Warm-Light® spacer from Azon creates a warm-edge glass unit that reduces thermal conductivity in any climatic condition. The result is a dramatic reduction in condensation on the glass surface in cool climates and less heat transfer in warm climates, as well as lower utility costs and a more comfortable interior environment. The polyurethane core in Warm-Light spacer is 100 times less conductive than stainless steel or conventional aluminum spacer. Also enables design flexibility for a variety of building types, window sizes and styles, with standard and custom colors.

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Krieger Specialty Products Co.

For over 70 years, Krieger has been custom manufacturing acoustical, blast, bullet, security, radio frequency shielding, thermal shielding, stainless steel, and other special purpose doors and windows. Their custom designed and manufactured doors and windows are utilized by leading architects in premier installations such as the Kodak Theater, Disney Concert Hall, Hollywood Bowl, Max Fisher Performing Center, Boeing Integration Center, The Getty Museum, L.A. Zoo, Basketball Hall of Fame, the Pentagon, and various other buildings throughout the world.

www.kriegerproducts.com

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Versatile Windows

Fennevations, LLC

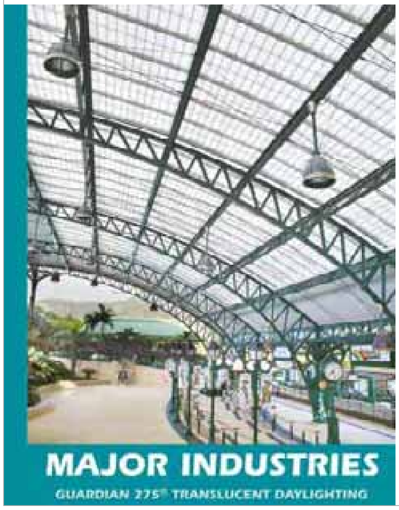
Fenevations manufactures Mega-Wood, Infinity Bronze, and SteelView windows. Megawood offers fine hardwoods with furniture-grade finishes, combined with heavy gauge bronze or hand welded, aluminum extruded exteriors. Infinity Bronze is a unique thermally broken solid bronze system offering beauty, style and traditional sightlines. SteelView offers stainless steel beauty for contemporary designs.

908-688-5710
www.fenevations.com
AIA Booth #2937

| Circle Reader Service #164

Curved Translucent FRP Panel Systems

Major Industries, Inc.



When your daylighting project demands something special, the TransCURVE™ translucent building panel system provides exceptional performance, with the added benefit of a striking, unique appearance. TransCURVE™ glazing panels feature a visually attractive aluminum grid core in several popular patterns, giving panels a refined look while maintaining exceptional strength. TransCURVE™ also features a premium architectural-grade FRP exterior skin that blocks damaging UV rays while transmitting the beauty of natural light.

715-842-4616
www.majorskylights.com

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Hurricane-Resistant Glass

Oldcastle Glass

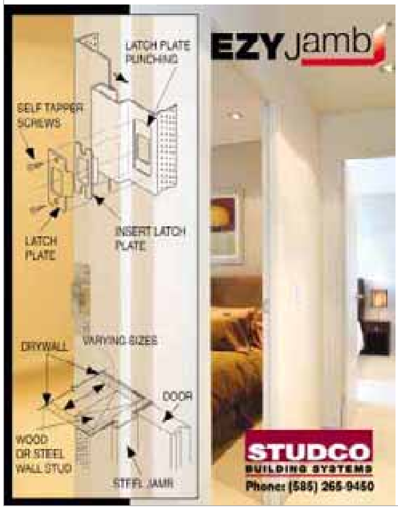
Featured on the Ritz-Carlton Club®, St. Thomas, StormGlass™—an Oldcastle Glass® exclusive—was chosen after other products failed. In independent testing, StormGlass™ met test requirements for large glass sizes of up to 50-sq.-ft. That means the freedom to design larger glazed openings while meeting the most stringent codes for hurricane resistance. StormGlass™ employs the industry's most advanced interlayer technology (the thinnest in the hurricane-resistant glazing market). The benefit? The highest level of protection without compromising the optical quality of the glass.

www.oldcastleglass.com

| Circle Reader Service #168

Trimless Doorframe

Studco Building Systems



Studco's EZY-Jamb product is a split-type jamb manufactured from cold rolled steel to produce a strong and secure assembly. EZY-Jamb comes with perforated sides for flush jointing which produces a contemporary flush finish door jamb with clean lines and inconspicuous detail. The jamb comes in two sections that fit neatly together and provides adjustability in wall thickness. Not only has the installer's dream been realized, but the architect's dream has started.

585-265-9450

| Circle Reader Service #171

Retractable Roof Enclosures & Skylights

OpenAire Inc.

Custom-designed retractable roof structures and operable skylights capable of spanning up to 140-ft. At the touch of a button, motorized panels retract to open up to 50% or more of the roof area. OpenAire can span up to 140-ft. and do custom designs (domes, barrel vaults, biparting, etc.) using its exclusive maintenance-free, thermally broken aluminum framing. These enclosures and operable skylights are perfect for indoor waterparks, pools, atria, and anywhere that you want to bring the outside in.

800-267-4877
www.openaire.com

| Circle Reader Service #169

Door & Window Systems

From the ISO 9001 certified manufacturer, Crystal® Window & Door Systems ThermoBlok™ Series aluminum windows feature robust frame designs, up to AAMA AW85, Intercept® glass spacers, thermal break technology, optional Low E coatings, and an architectural palette of powder coated colors and specialty finishes. The company is an AIA affiliate member. Fax number 718-460-4594 Email marketing@crystalwindows.com

800-472-9988, x3222
www.crystalwindows.com

| Circle Reader Service #172

Fire Resistance is Cool

Pilkington North America - Fire Protection Glass

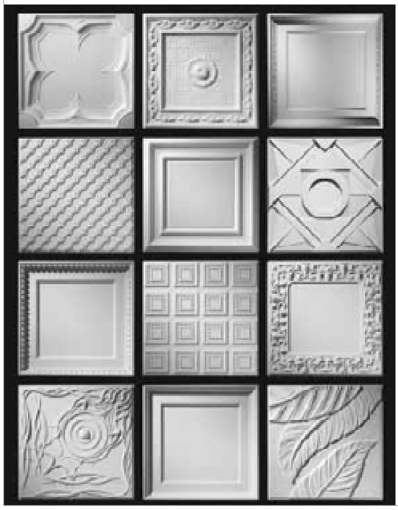
Pilkington Pyrostop™ is available with many options including opaque films, colored interlayers, surface designs and lightly sandblasted. Pilkington Pyrostop™ can also be combined with any of the Pilkington products to meet your design needs. For more information contact Technical Glass Products or see www.pilkington.com/fire or www.fireglass.com.

800-426-0279
www.fireglass.com

| Circle Reader Service #170

Ornamental Plaster Ceiling Tiles

Above View Mfg., By Tiles, Inc.



Above View ornamental plaster ceiling tiles are fabricated from a non-toxic, non-combustible, proprietary composition. They drop into any standard 15/16-in. T-Bar grid system. There are more than 50 standard designs, custom design work, and 1,300 custom colors and faux finishes available upon request.

414-744-7118
www.aboveview.com

| Circle Reader Service #173

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Binvetec

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Presenting "Cocoon," and the Free Pattern Rotating Carpet Tiles™ collection. The only carpet tile floor covering specifically designed to allow a multitude of patterns to be created or no pattern at all. By grouping a few tiles, then repeating the group on the floor, a unique pattern emerges. Change the group and likewise the pattern changes. By contrast, by installing the tiles with random rotations, a pattern-free floor covering can be achieved. With TractionBac™ non-adhesive installation system, the floor design can be changed at any time. Suitable for all commercial interior environments. Email binvetec@sbcglobal.net

www.binvetec.com

| Circle Reader Service #174

Crystallized Glass Ceramic Architectural Panels

Technical Glass Products

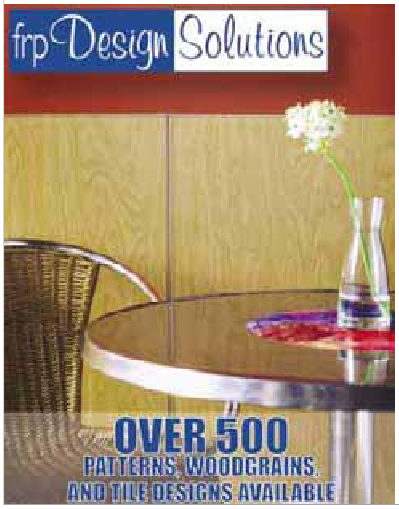
Neopariés® and Neopariés® LT are lighter yet stronger than granite. Commonly used for cladding interior and exterior walls, flooring, and counter or tabletops, they are virtually impermeable and not subject to freeze-thaw damage, penetration by rust, mortar or other staining substances. Contact Technical Glass Products at (888) 397-3473 or www.tgp-america.com.

888-397-3473
www.tgpamerica.com

| Circle Reader Service #177

Decorative Wall Panels

Crane Composites/Kemlite Company



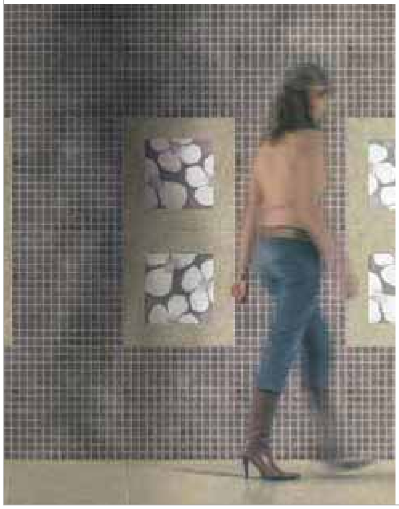
frpDesign Solutions is a family of decorative wall panels that provides an alternative to traditional wall coverings such as ceramic tile, wood paneling or vinyl wall coverings. Offering both functionality and design, products in the frpDesign Solutions line are made of a moisture-resistant frp panel with a decorative finish that includes myriad colors, patterns, and woodgrains, as well as a tile-look panel. Available with over 500 choices, frpDesign Solutions is easy to install and maintain. For more information, visit Kemlite on the web.

888-332-6377
www.frpdesignsolutions.com

| Circle Reader Service #175

Porcelain Wall Tiles

Viva Ceramica



Even though they had introduced Central Station at Cersaie 2005 as a color through porcelain floor tile series, it was easy to convert it to a wall covering. It's just so adaptable with its suggestions of metal and its decorative squares and circles in crackle glaze. And both the big diameter and the 30cm square are ideal for minimalist mosaic decors in bathrooms or on walls in public areas.

www.cerviva.it

| Circle Reader Service #178

Decorative Metal Ceilings

Gage Corporation, Inc.

The Gage Corporation International has been designing and manufacturing decorative metal ceilings since 1989. Gage ceilings feature more than 50% post-consumer recycled material and are visually rich, functional, and versatile as a design medium. Custom collaboration is encouraged. Email gage@centruytel.net

800-786-4243
www.gagecelings.com
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Architectural Sheetmetal Products

CopperCraft

CopperCraft creates meticulously formed dormers, spires, cupolas and other specialty sheet metal products using copper and other quality metals. Their Old World craftsmen will work with your ideas to develop custom pieces for most any project. Their parent company, Fabral, manufactures high quality architectural metal roofing and cladding systems.

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Canopies & Walkway Covers

CPI Daylighting Inc.

CPI provides single source responsibility for entire structure from the ground up. CPI's new Clearspan design for translucent canopies and walkway covers eliminates the horizontal cross beam and offers an economical, functional design with unequaled aesthetic appeal. Clearspan provides an excellent shelter and gives an open-air feeling by allowing natural daylight through to light up the area below.

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www.cpidaylighting.com

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Canopies & Walkway Covers

Mapes Industries, Inc.

Mapes Industries manufactures a complete line of hanger rod canopies and walkway covers. These pre-engineered canopies incorporate roll formed and extruded roof decking, flat or corrugated, with projections up to 12-ft. With multiple fascia profiles, the canopies are a cost effective alternative to jobsite built designs. Custom colors are also available. Specially designed brackets allow these canopies to be attached to any wall surface including EIFS, metal buildings and CMU. For more information, please call 800-228-2391 or visit www.mapescanopies.com.

800-228-2391
www.mapescanopies.com

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Decorative Cluster Mailboxes

Custom Home Accessories, Inc.

Custom Home Accessories has enhanced the security of the "Regency Collection" of decorative CBU mailboxes to meet or exceed the newest USPS standards. High-strength, heavy-gauge doors and high security locks help resist even the most determined vandal or thief. Units come in USPS gray, black or bronze. Custom powder coat colors are also available. Patent pending.

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www.mailboxes.info

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800-591-9050 or 626-855-4854
www.neo-metro.com

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Harmonic Environments is the only waterfall manufacturer to offer ZonePure™ water purification systems with every waterfall, making their products uniquely suited for healthcare, hospitality, offices, or anywhere clean and healthy water features are desired. Each custom waterfall can be created using environmentally friendly materials.

800-497-3529
www.HarmonicEnvironments.com

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Modern Outdoor offers three complete lines of high-style, clean-lined environmentally conscious outdoor furniture. The Modern Outdoor Collections are commercial grade products designed for use in all manner of public spaces—restaurants, hospitality, parks, resorts, hotels—yet have an aesthetic that is perfect for a residential client's backyard setting. Their products now come in ipe or polyboard, stainless steel or powder-coated steel, and a natural composite material. They offer net pricing to qualified members of the trade. View the entire collection online.

818-785-0171
www.modernoutdoor.com

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800-333-9939
www.steelcase.com

| Circle Reader Service #186

Architectural Ceiling Fans & Lighting

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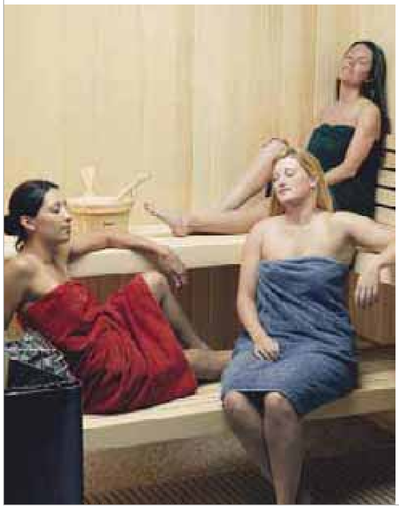
877-858-5333
www.g2art.com

| Circle Reader Service #189

Saunas

Finlandia Sauna Products, Inc.



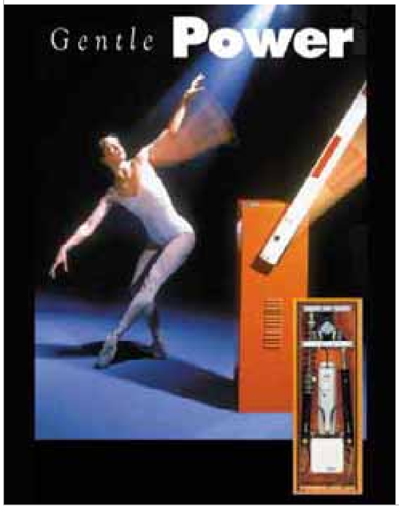
Finlandia Sauna has manufactured exclusive and authentic saunas since 1964. Finlandia offers precut sauna packages and modular sauna rooms as an affordable luxury that can be included in any remodel or new construction. The company markets four all-clear western softwoods and is the only manufacturer to use 1-in. by 4-in. paneling, instead of the cheaper 1/2-in. by 4-in. material used by others. Finlandia's packages include all room parts, a choice of a Finnish made electric heater, a prehung door with choice of glass, and all necessary accessories.

800-354-3342
www.finlandiasauna.com

| Circle Reader Service #187

Barrier Gate Operators

FAAC International, Inc.



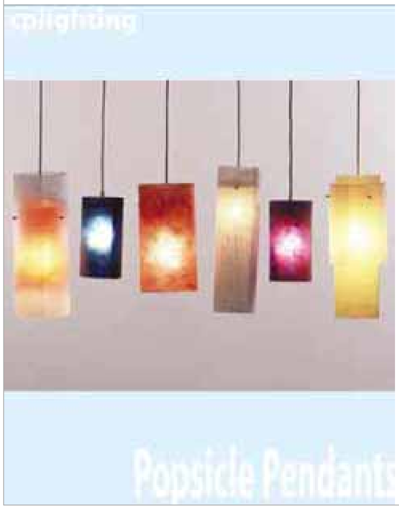
FAAC is the world's largest specialized manufacturer of hydraulic operators for barrier, slide and swing gate systems. Barrier features include 100% continuous duty operation, the ability to raise beams up to 23-ft., and control panels with full system compatibility. High-speed and economy models available. Visit their web site for brochures and specs.

800-221-8278
www.faacusa.com

| Circle Reader Service #190

Custom Light Fixtures

CPLIGHTING



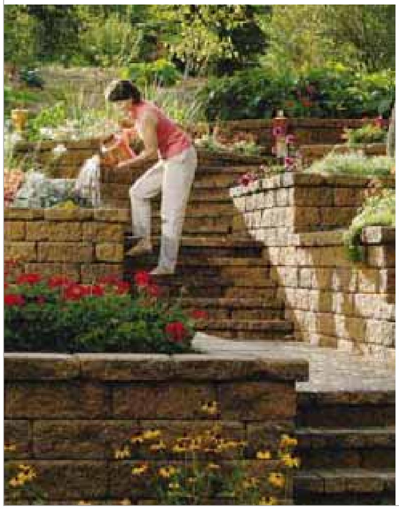
CPLIGHTING offers a wide variety of custom made acrylic light fixtures designed by Christopher Poehlmann. The UL listed, eco friendly *Popsicle Pendant* series features recycled acrylic shades that will accommodate 75W type A bulbs or Edison base compact fluorescents. These fixtures are offered in a choice of 25 colors to meet your specific project needs. The plastic *Popsicle Pendants* are a perfect fit for residential, commercial and hospitality interiors. Go to their web site to see the complete line of CPLIGHTING designs including the *newGROWTH* aluminum branch chandelier.

866-597-4800
www.cplighting.com

| Circle Reader Service #188

Retaining Wall Systems

VERSA-LOK Retaining Wall Systems



VERSA-LOK is the industry's original solid, pinned segmental retaining wall system, offering unequalled design versatility and ease of installation. VERSA-LOK is available in attractive split-face and vintage weathered textures, and readily accommodates soil reinforcement to build walls 50-ft. or taller. VERSA-LOK Mosaic combines random-pattern beauty with VERSA-LOK brawn. Email versalok@versa-lok.com

800-770-4525
www.versalok.com

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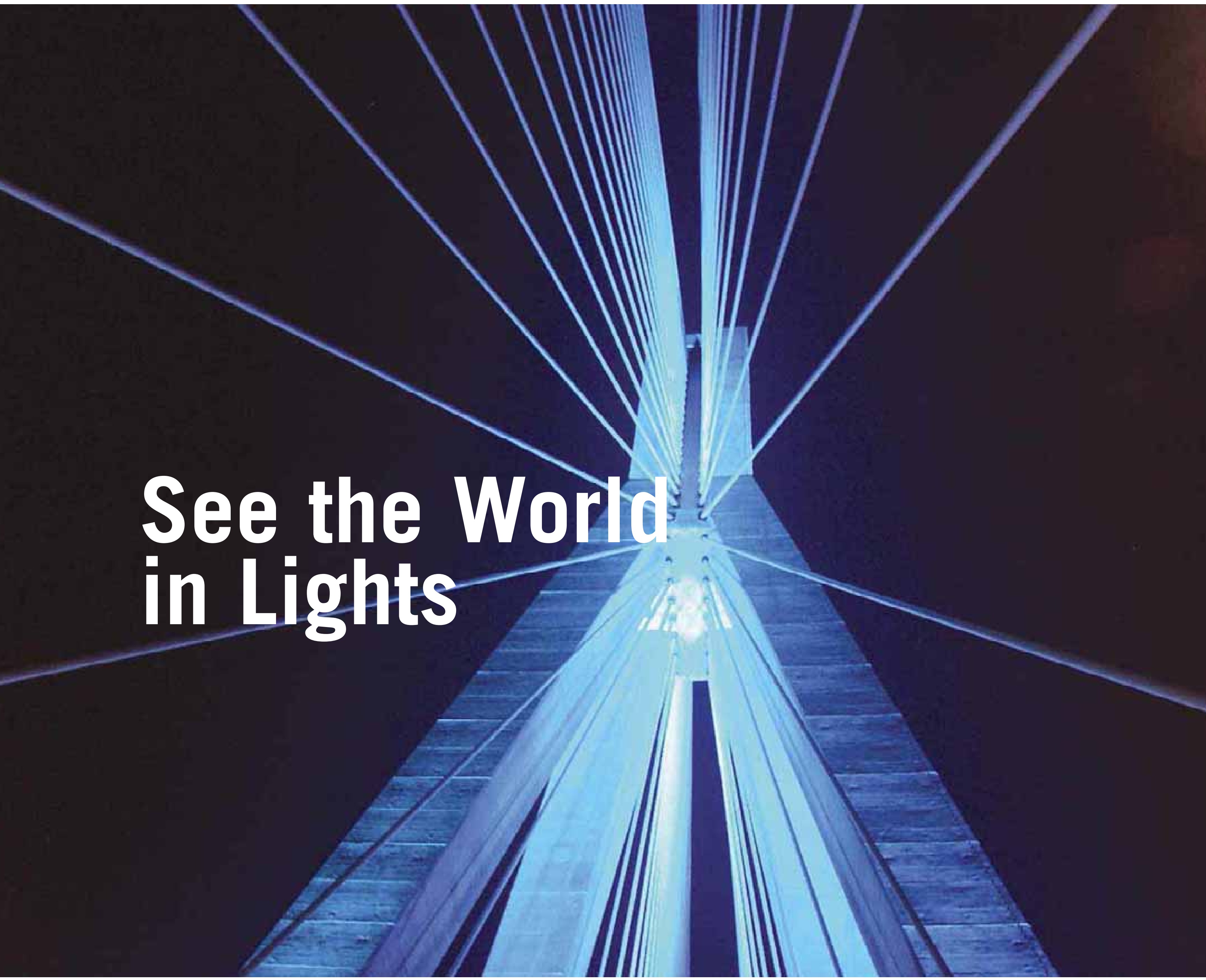

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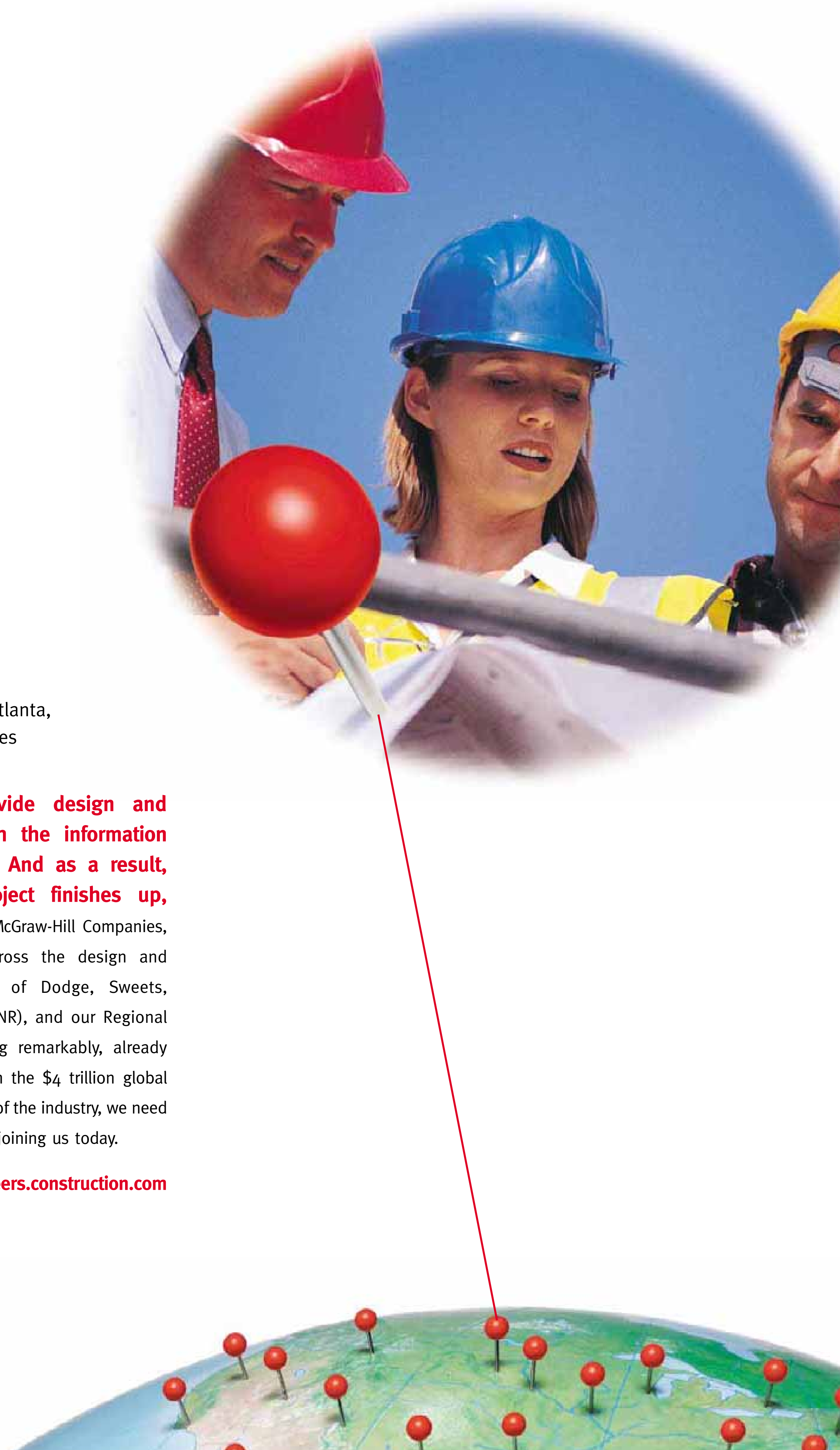

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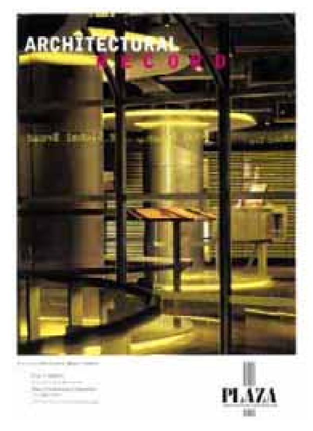

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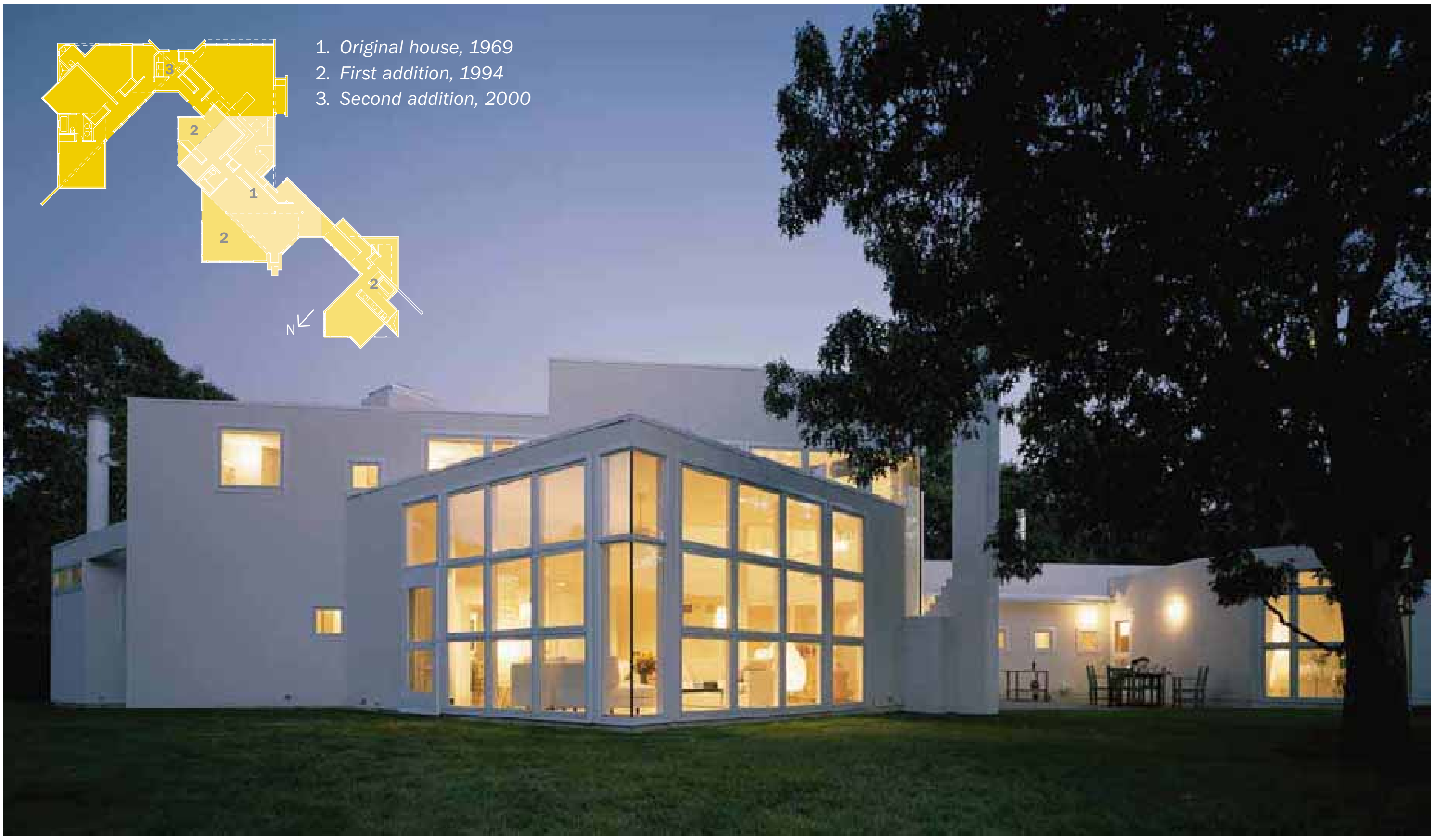


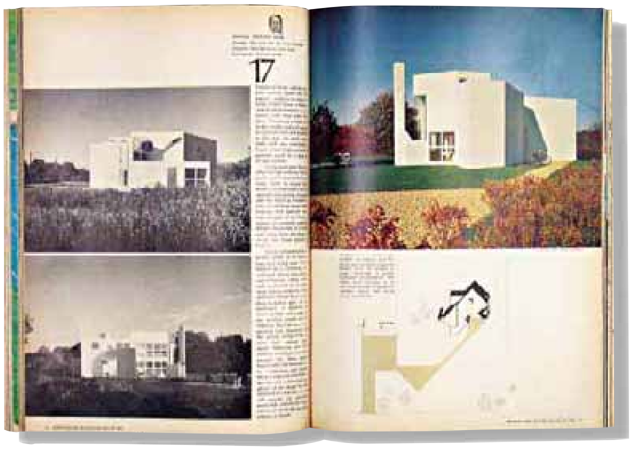
My, how you've grown

Richard Meier's Hoffman House, in East Hampton, New York, published in ARCHITECTURAL RECORD in May 1969 (below), has undergone two additions by Stamberg Aferiat Architecture. Two new wings extend west and east (plan, above) and the living space was expanded on the northern side (above).

Adding to a Richard Meier House may have been too daunting for most firms, but not Stamberg Aferiat, a firm that has also expanded houses designed by Charles Gwathmey and Hugh Hardy. When Meier, too busy for the project, personally recommended Paul Aferiat, who had worked for him in the 1970s, and his partner Peter Stamberg, the architects were eager for the challenge.

Anita Hoffman, the original client for the 2,000-square-foot East Hampton home, which ARCHITECTURAL RECORD published in 1969, found, after a quarter century living in the house, that the tight geometry was too constraining to house guests. Hoffman wanted a summer retreat for her visiting children, now married with children of their own. So the architects added a bedroom suite for her in 1994, extending the house to the west, and turned three small bedrooms into two larger ones, bringing the total area of the residence to 3,000 square feet. But after the project was completed and the family began flocking to it, Hoffman found it necessary to request another expansion in 2000. Stamberg Aferiat then added 2,000 square feet of space, building an eastern wing with three bedrooms, and expanding the combined kitchen and family room.

For both additions, the architects kept Meier's intentions in mind. "This house was about that very tight, strict geometry and the idea of a pair of rectangles rotated on one another," explains Aferiat. "It was a closed system" that required one type of architectural language, whereas for additions to other houses, the firm tends to create collages. To establish a hierarchy, the architects kept the rooflines of the added wings lower than those of the original house. Meier gave the project a tremendous compliment, claiming that in many ways, "the project is more successful because of the way that it is anchored to the site now." *Sarah Cox*



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